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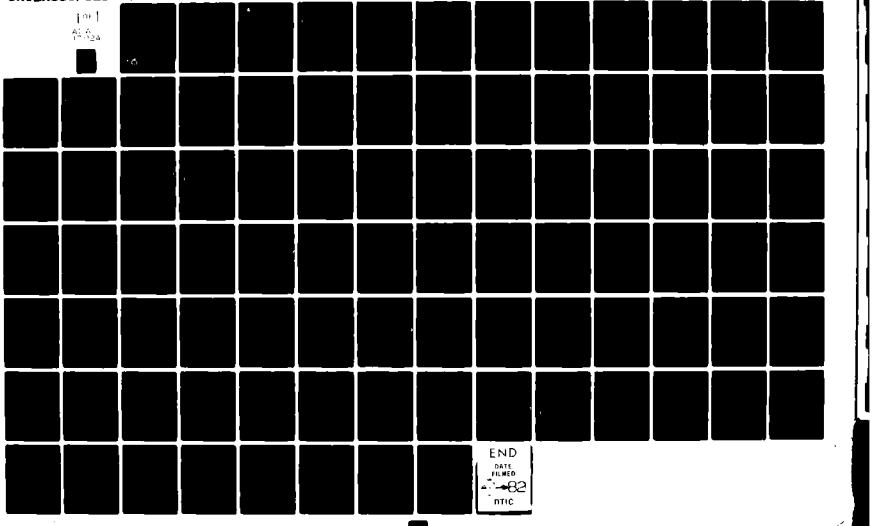

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BY THE COMPTROLLER GENERAL

Report To The Chairman, Joint Economic Committee United States Congress

OF THE UNITED STATES

Industrial Policy: Japan's Flexible Approach

Japan's impressive growth from a war-devastated nation in the 1950s to a major economic power today has been the subject of much debate in the industrialized world.

GAO found that Japanese industrial policies have changed significantly over time in response to changes in the international and domestic economies. The flexibility of such policies may, in fact, be the key to the apparent success of industrial policy in Japan.

This report deals with the evolution of industrial policies in Japan in both macro- and microeconomic terms and presents summary analyses of five sectors--computers, robotics, aircraft, shipbuilding, and textiles--to illustrate industrial policies for emerging and declining industries.

UNITED STATES GENERAL ACCOUNTING OFFICE

GAO/ID-82-32

JUNE 23, 1982

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-207677

The Honorable Henry Reuss
Chairman, Joint Economic Committee
Congress of the United States

Dear Mr. Chairman:

As you requested, this report provides an analysis of Japanese industrial policy. It discusses the formulation and content of Japan's macroeconomic policies, specific industrial programs which have been used in expanding and declining industries, and the changes in policy instruments during the postwar period.

The report was reviewed informally by a number of specialists on the Japanese economy and individuals in the Japanese Government.

We anticipate wide public interest in the subjects discussed in the report. Therefore, as arranged with your office, we are distributing it to other Members of Congress and representatives of the administration.

Sincerely yours,

Charles A. Bowsher

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CHAIRMAN,
JOINT ECONOMIC COMMITTEE

INDUSTRIAL POLICY: JAPAN'S FLEXIBLE APPROACH

D I G E S T

The interest in Japan's approach to industrial growth centers around its apparent success in developing specific industries with good world market prospects and shifting resources out of contracting industries.

The Chairman of the Joint Economic Committee requested that GAO analyze Japanese industrial policy to explore the contribution of macroeconomic policy to industrial growth and to identify those industrial policies which support growing industries and those which assist declining industries to adjust. GAO looked at these policies as implemented in the computer, aircraft, robotics, shipbuilding and textile industries. GAO found that Japan's industrial policies and the instruments used to implement them have changed significantly over time in response to changes in the domestic and international economy.

HOW DOES THE GOVERNMENT ENSURE SELECTED INDUSTRIES' ACCESS TO INEXPENSIVE CAPITAL?

In the face of widespread industrial destruction and critical shortages of capital following World War II and the Occupation, Japan undertook restructuring of its economy by encouraging and facilitating investment in industries considered basic to an industrialized economy. During most of the post World War II period, interest rates were kept artificially low, so demand for loanable funds exceeded supply. The government rationed available funds through direct lending from Japan's central bank to the city banks and, in turn, to companies in order to encourage, or conversely discourage, investments in certain designated industries. Thus, steel, autos, and shipbuilding in the 1950s and 1960s and electronics and machinery in the 1970s received funds while service industries did not. Such credit rationing is today less effective in influencing the pattern of industrial growth. This is due primarily to the financial success of these industries and their consequent ability to finance activities out of retained earnings rather than depending on government funding, and the growth of alternative financing sources.
(See pp. 7 to 14.)

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HOW HAVE HIGH PERSONAL SAVINGS BEEN CHANNELED TO SUPPORT INDUSTRIAL GROWTH?

Significant amounts of personal savings have been deposited in savings accounts operated through Japan's post offices, referred to as the postal savings system. The government, through the Fiscal Investment and Loan Program, Japan's "second" budget, directs the postal savings and pension systems to financial intermediaries, such as the Japan Development Bank, which make loans to targeted industries. These loans have served as a signal to the private financial sector, which in turn has channeled personal and corporate savings into these same industrial sectors. Since about the mid-1970s, the government has found it needs to commit more of its resources to non-growth-promoting purposes to assist a number of structurally depressed industries and ensure the quality of life of an increasingly aging population. This is not to say that support for industrial growth has ceased; today support is geared to developing and diffusing technologies to improve productivity and to contribute to high value added, resource conservation, pollution control, and social welfare. (See pp. 15 to 22.)

IS ECONOMIC PLANNING AN IMPORTANT CONTROL MECHANISM?

Macroeconomic planning consists of setting projections of economic growth and general goals for the economy, while microeconomic planning consists of determining the resource needs of major industrial sectors based on macroeconomic forecasts and goals. Planning centers around building a consensus to provide a common direction for business, government, labor, and consumers. Until the mid-1970s, that direction was toward achieving high economic growth. Since then, however, several factors have weakened the consensus supporting high economic growth, most notably those discussed in the previous section. These factors are playing a larger role in the consensus building and planning process. (See pp. 22 to 28.)

DOES GOVERNMENT CONTROL INDUSTRIAL DEVELOPMENT?

Japan succeeded through the early postwar period in marshalling an impressive array of industrial policy instruments to foster investment-led growth. Through the mid-1960s, the most powerful of these

were controls imposed on economic activity through the Foreign Exchange and Foreign Trade Control Law. Through its rationing of foreign exchange, the government was able to control the types and volumes of imports needed for industrial reconstruction and to protect and strengthen Japanese domestic industry by reducing foreign competition. Significant financial support for industrial development coupled with extensive controls over trade and capital flows characterize the foundation upon which Japan grew to be an economic power. (See pp. 29 to 38.)

In the mid-1960s and throughout the 1970s, as the Japanese economy began to grow, Japan began to dismantle many of these industrial policy tools in response to pressure from its major trading partners. This process, however, has in some instances been slow in materializing, particularly with reference to trade barriers. In numerous instances, while access to the Japanese market was effectively restricted, Japanese industries made significant inroads into foreign markets. Successive rounds of the Multilateral Trade Negotiations have reduced or eliminated tariff barriers; today, however, non-tariff barriers such as product testing, standards, etc., have become more troublesome in all countries' trade relations. (See pp. 40 to 44.)

As trade and investment laws changed, the Ministry of International Trade and Industry (MITI) lost a major source of its power over industry--the foreign exchange allocation. Moreover, as key industrial sectors have gained internal financial strength and access to domestic and international capital markets, MITI's direct influence and control over the direction and course of industrial development has waned. (See pp. 46 to 48.)

DO JAPAN'S INDUSTRIAL POLICIES ASSURE SUCCESS AND HIGH GROWTH?

Today the emphasis of government support has shifted from heavy industries to sophisticated technology targets; industries are assisted in developing and diffusing, throughout the economy, technologies that contribute to high value added; productivity, and resource conservation. These include the computer, robotics and aircraft industries among others. Industrial policy programs for growing industries

are implemented after extensive discussions between the government and groups representing industry and other interests. (See pp. 49 to 52.)

Direct subsidies to joint government-industry research and development programs are widely used instruments of government assistance for technology development, as are tax and leasing programs for technology diffusion. These mechanisms work through incentive rather than control so the government has less direct influence over industrial development than it had during earlier periods. Significant obstacles hamper the success of government policies in each growth industry we reviewed. For example, development of leading-edge computer technologies presents new risks for the government and computer companies. Robotics manufacturers face an as yet undefined and undeveloped market at home and abroad, and development of new commercial aircraft and aircraft engines has become a task too costly for one company or one country to undertake. Japanese companies, like those in other countries, need to participate in international joint ventures. The working relationship between the government and industry is not as close as it once was, and the trend toward less direct government influence over industrial development may continue. (See pp. 53 to 65.)

HAS JAPAN SUCCESSFULLY ASSISTED ITS NON-COMPETITIVE INDUSTRIES IN ADJUSTING TO DECLINE?

Rising labor costs, yen revaluations, sluggish world demand, lower priced products from Southeast Asia, increased raw materials and energy costs, and foreign market import restrictions have all contributed to severe economic disruptions for some Japanese industries. The government has attempted to assist these declining industries to adjust to new circumstances by providing incentives to scrap excess production capacity. The government also assists workers in these industries through a number of unemployment and reemployment programs. (See pp. 66 and 67, 75 and 76.)

In 1978, the Structurally Depressed Industries Law was passed to address some generic problems of decline. Different mechanisms are used for short- and long-term problems. The thrust of the government's current financial assistance is to small- and medium-sized firms.

Larger firms are expected to adjust on their own as well as assume some of the burden of assistance to small and medium firms. Not unlike the United States, the Japanese Government has found that often political reality significantly constrains the formulation and implementation of economically rational decisions to phase industrial sectors out of the economy. (See pp. 67 to 72.)

Conflicts have arisen between government and industry, and between firms within an industry, in setting priorities and implementing "stabilization programs." Historically, high growth rates and a mobile and variable labor force have helped to ease the adjustment process; today's slower growth has made this process more difficult. (See pp. 73 to 76.)

Nevertheless, adjustment of declining industries has occurred, although the long-term success of this adjustment process may be questioned. In a slow growth environment, recognizing that emerging industries can ease adjustment problems of declining industries and coordinating programs to assist resource shifts from declining to emerging industries are key elements of Japan's "positive adjustment" policy. (See pp. 76 and 77.)

CONTENTS

Abbreviations

FILP	Fiscal Investment and Loan Program
GAO	General Accounting Office
GATT	General Agreement on Tariffs and Trade
GNP	Gross National Product
IBM	International Business Machines, Inc.
IHI	Ishikawajima-Harima Heavy Industries
IMF	International Monetary Fund
JAROL	Japan Robot Leasing Corporation
JDB	Japan Development Bank
JECC	Japan Electric Computer Corporation
MITI	Ministry of International Trade and Industry
NTT	Nippon Telephone and Telegraph Company
OECD	Organization for Economic Cooperation and Development
R&D	research and development
VLSI	very large scale integrated circuits
XJB	next generation jet engine
YXX	next generation commercial aircraft

CHAPTER 1

INTRODUCTION

In 1945 Japan faced an uncertain economic future, confronting wartime destruction and an Occupation 1/ attempting to restructure the political and economic fabric of the nation. Japan's phenomenal growth since World War II has sparked the interest of many industrialized countries facing increased competitiveness from newly industrializing countries and from Japan.

This report assesses the role of industrial policy in Japan's postwar economic achievements in the context of the specific mechanisms employed, the more general context of macroeconomic fiscal and monetary policies, and the economic planning process.

HISTORICAL OVERVIEW

At the time of its surrender in August 1945, Japan was faced with inflation, shortages of food and energy, a standard of living that had declined to pre-World War I levels, and the wartime destruction of its cities. The Occupation authorities pursued a policy of "economic demilitarization."

U.S. policy toward Japan shifted with the burgeoning Cold War. Facilitating Japan's economic recovery with an eye to creating an Asian "bulwark against Communism" became increasingly important to the United States. By 1948 some of the more stringent economic measures of the early Occupation years had been moderated, and in 1949 the United States instituted a series of economic stabilization policies including the balanced budget principle. It was the Korean War, however, that spurred the beginnings of Japan's recovery through the foreign exchange income earned from U.S. Army expenditures and the corresponding expanding investments in industrial plant and equipment.

Japan regained its independence in April 1952. In the following years, Japan achieved an impressive rate of economic growth and demonstrated increasing international competitiveness. Table 1 shows real and nominal growth of Japan's gross national product (GNP) since World War II.

MANAGING THE ECONOMY: BASIC ECONOMIC TOOLS DEFINED

To assess the role of industrial policy and the resiliency of the economy since 1973, it is necessary to define terms and to show the relationship between monetary, fiscal, and industrial

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1/This refers to the occupation of Japan by U.S. defense forces following Japan's surrender in 1945 until Japan regained its independence in 1952.

Table 1

Nominal and Real GNP Growth in Japan
(note a)

Fiscal Year (note b)	Nominal GNP (Yen - billions)	Real GNP (Yen - billions)	Growth Rates Nominal (percent)	Growth Rates Real (percent)
1951	5,680	21,361	-	-
1952	6,516	23,780	14.7	11.3
1953	7,695	25,605	18.1	7.7
1954	8,000	26,315	4.0	2.8
1955	9,064	29,159	13.3	10.8
1956	10,174	30,952	12.2	6.1
1957	11,501	33,366	13.0	7.8
1958	12,050	35,353	4.8	6.1
1959	13,914	39,298	15.5	11.2
1960	16,571	44,213	19.1	12.5
1961	20,298	50,171	22.5	13.5
1962	22,146	53,385	9.1	6.4
1963	26,167	60,071	18.2	12.5
1964	30,328	66,445	15.9	10.6
1965	33,550	70,231	10.6	5.7
1966	39,452	78,204	17.6	11.4
1967	46,176	86,852	17.0	11.1
1968	54,689	98,162	18.4	13.0
1969	64,851	110,030	18.6	12.1
1970	75,092	119,126	15.8	8.3
1971	82,726	125,455	10.2	5.3
1972	96,424	137,678	16.6	9.7
1973	116,636	144,970	20.1	5.0
1974	138,045	144,663	18.4	-0.21
1975	151,797	149,807	10.0	3.6
1976	170,290	157,482	12.2	5.1
1977	188,804	165,774	10.9	5.3
1978	206,867	174,361	9.6	5.2
1979	222,702	183,993	7.7	5.5
1980	240,466	191,032	8.0	3.8

a/ Real figures based on market prices in calendar year 1975.

b/ Japan's fiscal year runs from Apr. 1 to Mar. 31.

Source: Compiled on the basis of Bank of Japan data.

policies and indicative economic planning. Industrial policy is directed by the Ministry of International Trade and Industry (MITI), indicative planning by the Economic Planning Agency, and monetary and fiscal policy by the Ministry of Finance and the Bank of Japan, Japan's central bank.

Macroeconomic management: monetary and fiscal policies

Monetary and fiscal policies are essentially demand management tools of the government. Generally, the U.S. Government uses these tools to smooth business cycles and encourage employment. Japan, however, has used them primarily to maintain equilibrium in balance-of-payments accounts and to direct investment funds to industry to support economic growth.

Large portions of both the general account (Japan's budget) and the so-called second budget--the Fiscal Investment and Loan Program (FILP)--have been allocated to industry since World War II. 1/ Moreover, tax exemptions and allowances geared to the development of specific industries provided impetus to industrial growth.

Until the mid-1970s, the Ministry of Finance and the Bank of Japan strictly regulated banking, interest rates, and bond markets. Through this regulation the government was able to set interest rates at extremely low levels, exert a great deal of influence over commercial bank lending policies, and control the allocation of foreign exchange and participation in capital markets.

Indicative planning

Indicative planning by the Economic Planning Agency is the process of setting macroeconomic growth goals for the economy. Generally, Japan's indicative plans have been directed toward cutting back in the primary sector (i.e., agriculture) and focusing on the secondary and tertiary sectors (i.e., manufacturing and services).

The indicative plans consist of projections for growth in trade, GNP, production, prices, consumption, government income, expenditures, and deficits, etc. The plans discuss at length

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1/The general account consists of funds obtained through taxes and payments to the Treasury; FILP consists of funds obtained through the Post Office savings and insurance programs, etc. The FILP account equals roughly 50 percent of the general account and has been a significant source of loan funds to various targeted industries. (See ch. 3.)

the government's objectives and policies, the justification for these objectives, and the implementation of the plans. The plans serve to achieve national consensus on long-range goals and the direction in which the economy should head. Cabinet approval of the plans gives them further meaning in a broad national sense.

Microeconomic management: industrial policy

Industrial policy consists primarily of the mechanisms used by government to attain various sectoral goals. The basic focus of industrial policy is microeconomic in that it directs attention to specific industrial sectors and attempts to identify the best way to encourage growth or adjustment to decline of a particular sector. Various tools employed to encourage industry to grow or rationalize include credit rationing, favorable access to investment funds and foreign exchange, the use of rationalization cartels, joint research and development programs, control over licensing of technology, use of commercial policy (e.g.,tariffs, quotas, export controls, etc.), and administrative guidance.

The process of targeting a specific industry begins with deliberations by MITI's Industrial Structure Council, a group responsible for drafting MITI's long-range plans (known as MITI Visions), and composed of representatives from government, industry, labor, academia, etc. Three such plans have been issued, covering the 1960s, 1970s, and 1980s, and outlining basic goals to be achieved and the criteria to be used in focusing government assistance to industry. MITI's planning is differentiated from that done by the Economic Planning Agency in that it more specifically focuses on which industrial sectors are to be targeted for growth and how. Specific details on mechanisms for targeting are drawn up by industry subcommittees of the Industrial Structure Council.

Dialogue between government and industry to achieve a consensus on goals and mechanisms is critical to the effectiveness of industrial policy. The role of industry and trade associations, individual firms, ad-hoc government committees, subgroups of the various ministerial agencies, etc. cannot be overemphasized. The cooperative working relationship which develops through government-industry interactions is equally critical to the success of industrial policy in Japan.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Chairman of the Joint Economic Committee requested that we undertake a study of Japan's industrial policies, particularly for the expanding computer, robotics, and aircraft industries and contracting shipbuilding and textile industries.

To meet the objectives outlined by the Committee, we surveyed published literature in Japan and in the United States on these issues (see appendix for a selected bibliography) and much of the

discussion of Japan's immediate postwar macro- and microeconomic policies is based on these published sources. In addition, we spoke with various government agency officials, industry representatives, and academics in both the United States and Japan to assess Japan's current macro- and microeconomic policies. Our data collection efforts in Japan focused primarily on recent developments in Japanese financial markets and changes in monetary and fiscal policy tools. We held interviews with officials of the Bank of Japan and the Ministry of Finance, various private sector representatives, and academics to discuss these issues. We also concentrated on recent developments in industrial policies for the five sectors we analyzed in detail through discussions with representatives in government, industry, trade and industry associations, and academics.

Since World War II, the United States has been the prime mover behind multilateral efforts to lower and eliminate barriers to free trade. However, the United States has restricted free trade in response to foreign competition. These actions have proven insufficient in remedying the decline of some major U.S. industrial sectors. Consequently, Congress has begun to explore alternative approaches for increasing U.S. competitiveness in international markets.

The interest in Japan's approach to industrial growth centers around its apparently successful efforts to promote the development of certain specific industries with good world market prospects and to facilitate the contraction and shift of resources out of other industries facing stiff foreign competition.

In order to address those factors which we believe to be most responsive to the Chairman's request, we have presented Japanese industrial policy in its historical, international, and macroeconomic contexts to assess the factors that influence the conduct of such policy. We assessed how industrial policies of the immediate postwar period have changed over time with changes in Japan's domestic economy and the international economy. Thus, we traced macroeconomic monetary and fiscal policies from the 1950s through the present, emphasizing those features which have directly affected the nature and conduct of industrial policy and have caused changes in the goals, focus, and tools of industrial policy.

Our report took into account the views of various experts from academia and industry. In addition, we received comments from individuals in the Japanese Government. Because the laws cited in this report are Japanese, the report was not subject to GAO's normal legal review procedures. Our review was performed in accordance with GAO's current Standards for Audit of Government Organizations, Programs, Activities, and Functions.

CHAPTER 2

BENEFITS AND CONSTRAINTS OF MACROECONOMIC POLICIES ON INDUSTRIAL GROWTH

Japanese monetary policy in the postwar years has been viewed as a means of achieving essentially three objectives: domestic price stability, balance of payments equilibrium, and maintenance of appropriate levels of business activity. Of these three objectives, primary weight, at least in the 1950s and 1960s, was given to maintaining balance of payments equilibrium. Indeed, Japan's monetary policy has been said to have been characterized by "extremely swift and sensitive reaction to balance of payments developments." 1/

Within this overall context of maintaining balance of payments equilibrium, monetary and fiscal policies in Japan during most of the postwar period were geared toward supporting and expanding investment-led growth. Monetary policies were directed toward keeping interest rates low in order to give companies access to relatively inexpensive money to facilitate investment-led growth. In its role as financial intermediator, the government funneled much of the high savings of the household sector into productive investment. Moreover, fiscal authorities also directed substantial tax revenues to growth-promoting investments. Beginning in the early 1970s, the government's ability to support growth through macroeconomic policies diminished.

Monetary authorities were able to support and influence investment-led growth by rationing credit. Because interest rates were kept below what the free market would yield, the demand for money always exceeded the supply. Rationing was administratively possible because the corporate sector depended on direct loans from Japan's 13 city banks which in turn depended on loans from the Bank of Japan. In addition, fiscal authorities were able to channel budgetary funds from tax revenues and savings in the postal savings system to the corporate sector.

A final tool of macroeconomic policy, economic planning, had its modern aegis during the Occupation years, with the establishment of the Economic Stabilization Board and the drafting of 5 and 7 year economic growth plans. The plans have generally underestimated the actual growth rate of the economy, but they have provided useful guides to government and business in establishing economic priorities.

1/U.S., Congress, Joint Economic Committee, The Japanese Financial System in Comparative Perspective, by Eisuke Sakakibara, Robert Feldman, and Yuzo Harada, Joint Committee Print (Washington, D.C.: Government Printing Office, 1982), p. 50.

Changes in the international and domestic economy during the early 1970s have had a slow but discernible effect on the continued viability of this system and the conduct of fiscal and monetary policy. Concerns with inflation and stable growth have become priority goals for fiscal and monetary authorities, while financial market development and internationalization of the economy have lessened government control.

By 1965, Japan's trade balance was in surplus to stay and GNP was exhibiting rapid growth. During the same year, Japan broke with its longstanding practice of having a balanced budget. As its economy grew, Japan took on a larger role in the international community, becoming a member of the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Cooperation and Development (OECD), and a signatory of Article VIII of the Articles of Agreement of the International Monetary Fund. 1/ Along with the rest of the world, Japan had to adjust to the system of floating exchange rates and the oil shocks of 1973-74 and 1979. Growth in Japan has slowed and, at the same time, there has been an increasing awareness of social concerns--the environment and the quality of life of an aging population. It was within this framework that Japan carried out macroeconomic monetary and fiscal policies in the 1970s. This chapter traces historically the benefits and constraints of macro-policies on industrial growth.

POSTWAR MONETARY POLICY

Who conducts monetary policy?

The Bank of Japan and the Ministry of Finance have had joint responsibility for conducting monetary policy in Japan; the relative influence of each has changed over time, based on legal and other factors. The Bank of Japan Law gives the Ministry of Finance the right to general oversight of Bank operations. Changes in reserve ratio requirements require Ministry concurrence. Discount rate policy and open market operations are conducted independently by the Bank, although the Ministry has, at times, had a great deal of influence on the discount rate. Maximum interest rates on deposits (excluding the postal savings system) are proposed by the Ministry and the final decision rests with the Bank of Japan. Although the Bank controls the foreign exchange funds general account, allocating foreign exchange for industrial development was a strong prerogative of the Ministries of Finance and International Trade and Industry. In general, the close coordination between the Ministry of Finance and the Bank of Japan

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1/ Members of the International Monetary Fund accepting the obligations of Article VIII agree to avoid imposing restrictions on international payments and to refrain from using multiple exchange rates or other discriminatory currency arrangements.

is an example of the consensus nature of Japanese policymaking; that is, the belief that monetary and fiscal policies should be unified in their support of industry. That is not to say, however, that consensus does not break down, as it did most notably in the early 1970s, when increased spending by fiscal authorities came into conflict with inflationary concerns of the monetary authorities. Since the 1970s, the Bank of Japan has had primary responsibility for monetary stabilization policies, and the Ministry of Finance has been primarily concerned with fiscal policies.

Tools of monetary policy

As credit allocators, the monetary authorities have a number of tools available to conduct stabilization policies. Because of the system in which the demand for funds was kept in excess of supply, changes in the discount rate and reserve requirements were relatively less important as monetary policy tools than the authorities' ability to allocate credit. Variations in the discount rate were very small and important not in changing the volume of loans (because the rate was always at a level at which demand exceeded supply) but as a government signal of relatively tight or expansive periods. Changes in the reserve requirements were even less significant.

Open market operations by the Bank of Japan did not entail trading in any "open" market. Until 1972, the Bank's activities consisted of allocating government bonds to a syndicate of banks at a regulated price. The small amount of government bonds (because of low government deficits) and their heavily regulated buying and selling meant "open markets" were of little importance to the Bank in implementing monetary policy.

The final tool of monetary policy is window guidance, through which the Bank of Japan sets aggregate ceilings on borrowings by the banking sector. In addition, the Bank of Japan sets informal ceilings on its lending to individual banks, based on their daily funds positions and longer term needs. Because a stiff penalty is imposed on bank borrowings above these allocated ceilings (the cost of borrowing is 4 percent above the official discount rate), banks were virtually prohibited from exceeding their ceilings with the Bank of Japan. This setting of aggregate and individual ceilings was important only during relatively tight money periods.

Conduct of monetary policy is based on structural characteristics of financial system

Credit rationing

Certain structural characteristics help to explain the conduct of monetary policy in the postwar period until roughly the mid-1970s. Lending policy--the rationing of credit--was in fact the principal tool exercised by the monetary authorities as a monetary stabilization mechanism. Japan's economy has been characterized by export-oriented, investment-led growth, which has led

to a large demand for funds by the corporate sector. High debt leveraging, which reinforced this growth, was made possible by interest rates held artificially low by the government. Companies raised money from bank loans rather than through equity financing because the cost of raising capital through loans was relatively cheap and because international transactions were virtually prohibited and domestic capital markets were highly regulated. High debt leveraging reinforced the system of credit rationing. 1/ Access to inexpensive capital reinforced the corporate sector's desire to invest and made long-term investments less risky.

The major lenders to these high growth companies were the 13 city banks. These banks are allowed to have a national branch system (whereas local banks are geographically limited), and they hold about 60 percent of their deposits from corporations.

The city banks, facing high demand from the corporate sector and having few sources from which to raise capital, turned to the Bank of Japan. The Bank supplied money to the economy through direct loans to the city banks according to a set of predetermined targets. In meeting the cash needs of the city banks through direct loans, the Bank of Japan operated somewhat differently than other central bank authorities, which affect the money supply primarily by purchasing government securities in an open market. Thus, throughout most of the postwar period, the Bank of Japan was placed in a situation where its external liabilities (loans to the city banks) were greater than its total deposits (primarily reserve assets). 2/

Basically, then, the corporate sector depended heavily on the city banks for a substantial portion of its investment funds. In turn, the city banks depended heavily on the central bank for their loan funds. These two factors reinforced the underdevelopment of capital markets and the system of credit rationing. As a

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1/This dependence of the corporate sector on bank borrowings is often referred to as overborrowing. In a detailed discussion of this phenomenon, Yoshio Suzuki states that between 1966 and 1970, the average proportion of corporate financing from bank borrowings was roughly 49 percent as compared with 40 percent from internal sources and 11 percent from securities issues. This proportion of debt financing in Japan was roughly twice as great as that in other industrialized countries. See Yoshio Suzuki, Money and Banking in Contemporary Japan (New Haven: Yale University Press, 1980), pp. 13-14.

2/This phenomenon is commonly referred to as overloan. Because the Bank, at least through the early 1970s, was not involved in purchasing securities or bonds, these secondary assets did not play a role in controlling overloan as they did in other industrialized countries. As a result, between 1956 and 1970, the Bank was in this overloan situation.

result, the monetary authorities had a great deal of influence over the allocation of credit, both over those sectors which received credit and those which did not, and thus the implementation of industrial policy goals.

This dependence was largely limited to the 13 city banks and that group of large companies with the highest growth. Smaller companies borrowed from regional or local banks whose lending abilities were determined by public deposits and legal reserve requirements. Small exporters turned for financing to the trading companies, which were usually affiliated with one of the major city banks.

Monetary authorities were not concerned with inflation which was low, nor with financing a government deficit which was insignificant. Any deficits which did exist were financed through an arrangement between the government and the city banks in which bonds were allocated among the banks at preagreed terms. The small amount of government issues, in turn, inhibited development of a market for government securities and issue price regulations discouraged development of secondary or repurchase markets.

To summarize, corporations with the greatest demand for capital were clients of the city banks. Because of low interest rates available from the banking sector due to actions of the Bank of Japan, that capital was raised through bank borrowings. The banks in turn met the demand for loans through borrowing from the Bank of Japan. The predominance of direct loans to supply funds inhibited the development of other financial markets. Moreover, the highly regulated and relatively inactive market for government and corporate securities inhibited development of a secondary bond and securities market.

Indirect financing and underdeveloped capital markets reinforce credit rationing system

Indirect financing

Of further importance in the Japanese financial structure was the predominance of indirect financing. Small savers, faced with a limited number of opportunities to invest and a tax system favoring interest on savings over individual dividends, deposited their savings with either private banks or the postal savings system. Banks used these deposits for direct loans to their corporate clients.

Interest rates on bank savings deposits were determined by the Bank of Japan and the Ministry of Finance; rates on savings in the postal system were determined by the Ministry of Posts and Telecommunications, and the Ministry of Finance. The Ministry of Finance has authority to regulate the branching activities of the city banks and has strictly controlled these activities,

resulting in few regional or local city bank branches. Thus, the postal savings system, with 20,000 post office branches throughout the country, has been more convenient for individual depositors. Moreover, postal savings have been favored by individual savers essentially because of the de facto differential tax treatment of interest income in these accounts as opposed to that in commercial bank accounts.

This regulation of interest rates and bank branching operations reinforced the predominance of indirect financing and the government's position in channeling funds from the net saving to net investing sector. This enhanced the government's role as financial intermediator, which in turn socialized high risk and strengthened the government's ability to direct funds to desired industrial sectors.

Capital markets

As noted previously, capital markets did not develop until the early 1970s. Government deficits were low throughout the early postwar period and the few public bond issues were allocated to a syndicate of 13 banks at pre-agreed terms. 1/ City banks, at least through the early to mid-1970s, were willing to accept these terms largely because these long-term issues could be sold to the Bank of Japan in return for credit against their individual borrowing ceilings. Thus, during this period, characterized by excess demand for capital and high city bank profit margins, city banks found these issues desirable. Because corporate sector issues were highly regulated by the monetary authorities and debt financing was relatively inexpensive, few such securities were issued. As a result, competitive price formation necessary for development of the long and medium-term markets did not occur because of the highly regulated nature of the market and the fact that few issues were floated.

The short-term money market, or call market, was the only "free" market in Japan through the early 1970s. Because this time period was characterized by excess demand for capital, however, interest rates in the call market were exceedingly high, thereby limiting participation and making this a market of last resort. 2/

1/In fact, long-term credit banks, mutual, local, and trust banks were also part of this syndicate; however, the proportion of bonds accepted by the city banks was significantly larger than that for the other syndicate members. Securities houses, although not part of the syndicate, accepted a small portion of these issues as well.

2/This market throughout most of the period was an interbank lending market. Additionally, when discussing "below-market" interest rates, it is the rate in the call market that is used for comparison.

International crises and domestic economic changes of the 1970s cause significant structural changes in Japan's financial system

A number of domestic economic trends and international events beginning in the early 1970s dramatically affected the conduct of monetary policy and its effect on the industrial sector.

With the collapse of the Bretton Woods system--the fixed exchange rate system created at the close of World War II--Japan was no longer able to maintain its exchange rate of 360 yen to the dollar. The Bank of Japan, fearing adverse consequences of a yen revaluation on Japanese exports, initially attempted to maintain the 360 yen rate, which resulted in a huge surplus of yen funds in the economy and led to inflation.

Beginning in 1973, the monetary authorities initiated restrictive measures. Reserve requirements were increased five times during 1973 and 1974, while the official discount rate was increased five times during 1973. Price stabilization became the prime concern of both the Bank of Japan and the Ministry of Finance, as soaring increases in oil prices and Japan's other commodity imports exacerbated inflationary pressures. Growth of the economy slowed. As the secondary market began to develop, large rate differentials between the issue price of government bonds to the syndicate and the secondary market forced the increasingly reluctant city banks to hold greater proportions of larger government debt.

The economy was slowly being internationalized. Large surpluses in the balance of payments led to liberalized movement of goods and capital. Large domestic companies were turning to the international capital markets to raise funds largely through convertible bond issues, and these companies' bond issues were underwritten by Japanese securities firms, a function forbidden to city banks. Many companies had assets which exceeded those of medium-sized banks because of their continued access to cheap money from the Bank of Japan through the city banks and because their increased participation as lenders in the unregulated call market led to huge profits. Table 2 illustrates the decline in the relative importance of the city banks in Japan's financial system.

Over time, these trends have made it increasingly difficult for the monetary authorities to maintain artificially low interest rates and heavily regulated markets. Consequently, a number of steps have been taken to liberalize short and long-term interest rates (see table 3). By October 1979, all bill market rates with the exception of those for Treasury bills had been liberalized. The government began issuing medium-term bonds, and those rates which did remain regulated were adjusted more frequently. The liberalizations were accompanied by substantial broadening of secondary markets for government securities and other instruments. At the urging of the Bank of Japan and in view of an

Table 2

Simplified Balance Sheet of City Banks and Other Financial Institutions
(Unit = Y billion)

Year-end	City Banks			Other Financial Institutions		
	1965	1970	1975	1965	1970	1975
Assets						
Central bank money	267.3	500.9	1,252.3	300.7	688.4	2,240.1
Call loans etc.	1.0	12.3	149.7	1,250.0	2,560.3	4,478.7
Investments	2,468.6	3,946.3	8,722.8	2,712.6	9,335.3	25,858.7
Loans	10,855.0	21,744.9	47,720.4	16,769.9	48,385.1	116,261.4
Liabilities						
Borrowing from BOJ	1,136.4	2,123.6	1,489.6	54.1	229.7	287.7
Call money etc.	1,327.0	2,567.3	6,624.4	170.0	34.2	382.1
Deposits	10,897.8	22,060.9	53,613.1	19,475.8	56,655.0	133,318.6
Others	230.7	102.5	-3,884.9	1,333.3	5,050.2	14,850.5
Net reserve assets	-2,195.1	-4,177.0	-6,712.0	1,326.6	2,984.8	-6,049.0

Source: Bank of Japan. Economic Statistics Annual
Notes: 1. Central bank money = Deposits at Bank of Japan + notes and coin (excluding checks and bills)
Call loans etc. = Call loans + loans for other financial institutions + bills sold
Call money etc. = Call money + loans from other financial institutions + bills bought
Net reserve assets = Central bank money + call loans etc. - loans from BOJ - call money
2. Financial Institutions includes the range of institutions covered in the "flow-of-funds accounts."

ever-increasing deficit, the Ministry of Finance agreed to liberalize interest rates for government securities.

Despite these liberalizations, regulation continues to exist. For example, foreign companies are restricted in their ability to raise capital. Existing controls such as these are in part responsible for continuing low rates of interest. (The official discount rate in Japan was last changed in December 1981 to 5.5 percent while the prime rate at that time was 6.0 percent.)

The force of recent economic conditions has caused changes in the relative importance of traditional monetary tools and credit rationing is becoming less effective. Institutionally, concurrence by the Ministry of Finance and the rest of the government about the need to control inflation and the Ministry's loss of most foreign exchange controls put the Bank of Japan in a much stronger position to influence policy. Interest rates have come to supplant the position once held by credit rationing in affecting the money supply.

Table 3

Chronology of the Deregulation of Interest Rates

1978

June

Dealers in call markets were instructed by the Bank of Japan to change their posted rates more frequently.

Financial institutions were permitted by the Bank of Japan to resell bills bought on the bills discount market, provided that the resale took place within one month after the purchase.

The Government started to issue three-year bonds through competitive bidding.

The Bank of Japan conducted open market purchases of long-term government bonds on a competitive basis. (Before this action was taken, there was a transition period from non-competitive scheme to competitive bidding.)

October

An agreement was reached between the Bank of Japan and participants to short-term money markets to create a seven-day call money market with freely determined interest rates.

November

The Bank of Japan and participants to short-term money markets agreed to create a one-month bills market with freely determined interest rates. They also agreed to liberalize interest rates on three-month bills.

1979

April

The practice of setting posted call money rates was discontinued, resulting in the liberalization of all call money rates.

The Bank of Japan and the participants to short-term money markets agreed to create a term call market, with a maturity of seven days or less.

May

Non-residents were granted access to the repurchase market where the instrument is repurchase agreements in securities.

Commercial banks were authorized to issue time certificates of deposit (CDs). The interest rate on CDs was freed from regulation.

October

An agreement was reached between the Bank of Japan and participants to short-term money markets to discontinue the practice of setting posted rates on two-month bills, thus leaving the determination of all call and bill discount rates in Japan to market forces.

Source: Organization for Economic Cooperation and Development, Economic Survey: Japan, July 1980.

POSTWAR FISCAL POLICY

Japanese fiscal policy in the postwar years has been characterized by a number of distinctive features, among them the adherence to a balanced budget until the mid-1960s and the budgeting of significant resources for industrial development.

The principle of "sound finance"--the balanced budget rule in effect until 1965--was a legacy of the Occupation years. The deflationary policies introduced in 1949 included an insistence on the preparation of a balanced budget as well as the introduction of a fixed exchange rate for the yen. By adhering to the principle of a balanced budget, the government in effect refrained from deficit financing through either bank borrowing or bond issues.

During the balanced budget era, tax revenues were generally adjusted to keep receipts to roughly 20 percent of national income forecasts, a principle generally designed to discourage rapid growth in public expenditures. Government expenditures in the postwar years have been moderate relative to the size of the economy and revenues; nonetheless, expenditures did grow rapidly during 1955-65 despite annual decreases in tax rates, because of the even more rapid growth in GNP.

The Japanese tax system has traditionally favored savings and investment. Fiscal authorities accomplished this largely by

--reducing double taxation of corporate income through preferential treatment of dividends;

--excluding from taxable income the interest income of small savers;

--favoring capital gains over dividend income; and

--keeping the average tax burden (combined with a high savings rate) low as compared with other industrialized countries.

In order to stimulate economic activity, the government decided to abandon the balanced budget principle in 1965. Fiscal authorities were able to increase public expenditures in excess of tax revenues with income generated through government bond issues. As was the case in monetary policy, changes in the international and domestic economy in the 1970s led to significant changes in the conduct of fiscal policy. Government spending increased in response to (1) industrial adjustments to decreased worldwide demand and increased energy prices and (2) increased assistance to industry to aid social goals, such as retraining, pollution control, etc. These growing demands on government spending were accompanied by slower growth and, consequently, declining tax revenues, which in turn led to budgetary deficits

in the general account. Japan's second budget, the Fiscal Investment and Loan Program, funded through individual savings, did not suffer as the Japanese continued to save even as inflationary pressures grew.

An analysis of the two budgets does not indicate a shift from spending for economic growth to spending for economic decline; growth continues to be of primary concern. However, the government's ability to spend to assist industry to grow is now limited and its concern with achieving high growth rates is tempered by the demand and need for achieving growth under increasingly constrained economic and social conditions.

General account and FILP contributions to investment and growth

General account

Japan's primary budget is the general account budget. This budget, largely funded through general tax revenues (and to a lesser extent through public bond issues after 1965), is the basic operating budget of Japan. 1/

Table 4 summarizes general account expenditures and their share of total expenditures/revenues for 1973-1981.

As a percent of total expenditures, social security payments, including social welfare and insurance, public health services and measures for the unemployed, grew between 1973 and 1978, then declined slightly. Expenditures for national debt grew dramatically from 4.5 percent in 1973 to 14.2 percent of total budgetary expenditures in 1981. Regional development (local finance) and public works (industrial infrastructure) expenditures declined for the most part between 1973 and 1981.

In addition to the general account, there were 38 Special Account budgets as of 1981. Each Special Account is established by law and has its own revenue sources; e.g., transfers from the

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1/According to one source, expenditures from the general account for "industry and economy" rose from 6.6 percent in 1955 to 11.6 percent in 1975. In addition, the source notes that a significant proportion of general account funds was also used in "national lands conservation and development," which is for public works or the buildup of industrial infrastructure through public investment. Together, these two classifications contributed to industrial development, 19.6 percent of the general account in 1955, 27.5 percent in 1965, and 25.9 percent in 1975. Takafusa Nakamura, The Postwar Japanese Economy (University of Tokyo Press, 1981), p. 135.

Table 4

Expenditures of General Account Budget
Fiscal years 1973-81
Y 100 million (% share)

Classification	1973	1974	1975	1976	1977	1978	1979	1980	1981 (initial)
Total Revenue/Expenditure	15,272.6	19,198.1	20,837.2	24,650.2	29,346.6	34,440.0	39,667.6	43,681.4	46,788.1
Social Security	2,219.6(14.5)	3,128.7(16.3)	4,032.2(19.4)	4,829.3(19.6)	5,712.4(19.5)	6,786.5(19.7)	7,643.9(19.3)	8,264.4(18.9)	8,836.9(18.9)
Education and Science	1,656.5(10.8)	2,307.5(12.0)	2,698.3(12.9)	3,058.1(12.4)	3,426.5(11.7)	3,847.4(11.2)	4,326.4(10.9)	4,601.4(10.5)	4,742.0(10.1)
National Debt Expense	688.2(4.5)	850.6(4.4)	1,102.4(5.3)	1,843.0(7.5)	2,315.3(7.9)	3,231.8(9.4)	4,375.6(11.0)	5,491.6(12.6)	6,654.2(14.2)
Pensions and Others	472.3(3.1)	596.6(3.1)	755.9(3.6)	987.7(4.0)	1,162.0(4.0)	1,329.1(3.9)	1,499.8(3.8)	1,639.9(3.8)	1,803.0(3.9)
Local Finance	3,243.9(21.2)	4,198.7(21.9)	3,371.8(16.2)	3,942.2(16.0)	4,826.8(16.4)	5,747.2(16.7)	6,664.5(16.8)	7,828.8(17.9)	8,766.6(18.7)
National Defense	979.0(6.4)	1,225.6(6.4)	1,367.4(6.6)	1,522.8(6.2)	1,699.3(5.8)	1,837.5(5.3)	2,092.6(5.3)	2,266.5(5.2)	2,400.0(5.1)
Public Works	2,848.7(18.7)	2,964.9(15.4)	3,313.7(15.9)	3,792.3(15.4)	4,984.8(17.0)	5,803.1(16.8)	6,663.6(16.8)	6,801.0(15.6)	6,655.4(14.2)
Economic Cooperation	139.5(0.9)	167.5(0.9)	174.9(0.8)	196.0(0.8)	210.3(0.7)	279.7(0.8)	337.6(0.9)	381.9(0.9)	425.4(0.9)
Measures for Small Business	80.2(0.5)	103.5(0.5)	126.8(0.6)	148.1(0.6)	195.1(0.7)	229.5(0.7)	230.9(0.6)	242.7(0.6)	249.7(0.5)
Transfer to Foodstuff Control Special Account	816.1(5.3)	998.3(5.2)	917.5(4.4)	901.6(3.7)	826.1(2.8)	935.7(2.7)	981.9(2.5)	955.5(2.2)	994.8(2.1)
Transfer to Industrial Investment Special Account	75.8(0.5)	66.3(0.3)	65.3(0.3)	63.2(0.3)	-	-	-	-	-
Measures for Energy	-	-	-	-	117.7(0.4)	273.8(0.8)	322.2(0.8)	424.9(1.0)	497.5(1.1)
Miscellaneous	1,987.7(13.0)	2,448.9(12.8)	2,776.3(13.3)	3,139.0(12.7)	3,608.3(12.3)	3,820.7(11.1)	4,178.6(10.5)	4,432.8(10.1)	4,412.6(9.4)
Reserves	65.0(0.4)	141.0(0.7)	200.0(1.0)	155.0(0.6)	262.0(0.9)	255.0(0.7)	350.0(0.9)	350.0(0.8)	350.0(0.7)

Note: Figures have been readjusted for comparison.

Source: Ministry of Finance, Quarterly Bulletin of Financial Statistics, Sept. 1977, Sept. 1981.

general account, receipts from government enterprises administered under these accounts, interest revenue from loans, borrowings, etc. These accounts provide another pool of funds for numerous purposes, including environmental control, energy development, development of infrastructure and so on.

Fiscal Investment and Loan Program

Funds for the FILP, created in 1953, are largely received from postal savings and annuity funds. These funds are held in the "Trust Fund Bureau Fund" of the Ministry of Finance. At various times the FILP account has equaled as much as 50 percent of the general account budget and has increased gradually as a percent of GNP from 4.38 percent in 1953 to 7.56 percent in 1980, as shown in table 5.

Table 5

Relationship of FILP
to General Account Budget and GNP

Year	FILP	General Account Budget	Nominal GNP	FILP as % of budget	FILP as % of GNP
		(Y billion)			
1953	337.4	1,017.2	7,695	33.1	4.38
1954	285.8	1,040.8	8,000	27.5	3.57
1955	297.8	1,018.2	9,064	29.2	3.29
1956	326.8	1,069.2	10,174	30.6	3.21
1957	396.8	1,187.7	11,501	33.4	3.45
1958	425.2	1,331.6	12,050	31.9	3.53
1959	562.1	1,495.0	13,914	37.6	4.04
1960	625.1	1,743.1	16,571	35.9	3.77
1961	830.3	2,063.5	20,298	40.2	4.09
1962	951.3	2,556.6	22,146	37.2	4.30
1963	1,209.2	3,044.3	26,167	39.7	4.62
1964	1,403.5	3,310.0	30,328	42.4	4.63
1965	1,776.4	3,723.0	33,550	47.7	5.29
1966	2,085.4	4,459.2	39,452	46.8	5.29
1967	2,496.8	5,113.0	46,176	48.8	5.41
1968	2,783.3	5,937.1	54,689	46.9	5.09
1969	3,180.5	6,917.8	64,851	46.0	4.90
1970	3,799.0	8,187.7	75,092	46.4	5.06
1971	5,008.7	9,561.1	82,726	52.4	6.05
1972	6,037.8	11,932.2	96,424	50.6	6.26
1973	7,413.4	15,272.6	116,636	48.5	6.36
1974	9,457.8	19,198.1	138,045	49.3	6.85
1975	11,465.5	20,837.2	151,797	55.0	7.55
1976	12,403.1	24,650.2	170,290	50.3	7.28
1977	14,414.2	29,346.6	188,804	49.1	6.64
1978	14,043.9	34,440.0	206,867	40.8	7.20
1979	18,332.7	39,667.6	222,702	46.2	7.56
1980	20,679.9	43,681.4	240,466	47.3	7.56

Source: Compiled by GAO from Bank of Japan, Ministry of Finance and the Economic Planning Agency data.

FILP funds were largely directed, through financial intermediaries such as the Japan Development Bank or the Japan Export-Import Bank to large-scale industrial projects, trade financing, and financing small- and medium-sized businesses. As table 6 shows, the FILP emphasized development of basic industries, housing, small business, transportation and communication, and so on. During the early 1960s, the emphasis on basic industries began to decline, while housing, environmental improvements, and roads began to grow in significance. These trends in expenditures continued into the 1970s.

International and domestic economic changes significantly change conduct of fiscal policy

With abandonment in 1965 of the balanced budget rule, the government began to increase spending in excess of revenues and to reevaluate developmental goals. Between 1965-70, the government began to attach increased importance to social welfare, environmental protection, and other social development programs, which were basically nonproductive investments, while continuing to support specified industrial development programs.

The tight monetary policies of 1970-71 and the yen revaluation shock in 1971 contributed to the beginnings of slowed growth. Fiscal authorities attempted to overcome these pressures by increasing spending and thus significantly increasing the issuance of national bonds in 1971 and 1972. At the same time, monetary authorities tightened monetary policy to cope with inflationary pressures resulting from their attempts to keep parity in the exchange rate following the demise of the Bretton Woods system.

No sooner had these measures been taken than the oil crisis of 1973-74 hit, exacerbating inflationary pressures. As GNP fell to a real growth rate of -0.21 percent in 1974, fiscal authorities attempted to increase spending to overcome the recession following the oil crisis. As a result, the general account deficit began to skyrocket, as noted in table 7. This deficit continued to grow following the oil shock.

With growth in GNP slower than pre-1974 levels, the start of inflationary pressures, and the oil crisis of 1979, savings began to decline. The absorption of government bonds which had been little problem before this period because of high savings and a strong demand for private investment funds, became increasingly difficult. City banks became increasingly unwilling and potentially unable to continue purchasing significant bond issues to finance the growing government deficit.

Internal pressures of this nature led the government to declare the fiscal year 1982 budget a "zero increase" budget with but a few exceptions (defense, welfare, etc.). Projected increases stand at 6.2 percent over the fiscal year 1981 budget.

Table 6

Sources and Uses of Treasury Investments and Loans

	Sources (¥ billions)			Uses (component ratios %)												
						Facilities										
Year	Total	Treasury funds	Public bond issues	Housing	Environmental improvement	Public welfare	Education	Small business	Agriculture, forestry, fisheries	Nat'l. lands conserve. and disaster relief	Roads	Transportation and communications	Regional development	Basic industries	Trade & economic cooperation
1953	337.4	298.9	38.5												
1954	285.8	251.4	34.4												
1955	297.8	246.2	51.6	13.9	7.7	2.1	4.6	8.2	8.9	7.6	3.7	12.3	8.6	15.1	7.1
1956	326.8	241.0	85.8	15.0	7.7	2.0	3.6	9.3	7.3	5.7	4.2	12.2	14.2	13.8	5.0
1957	396.8	351.6	45.2	13.8	9.3	1.7	3.1	16.9	6.2	4.2	2.7	11.4	9.6	20.2	0.9
1958	425.2	371.6	53.6	15.4	9.6	1.5	3.1	14.6	7.1	4.8	3.4	9.7	9.4	21.4	---
1959	562.1	466.2	95.9	13.8	8.4	1.3	2.8	14.1	8.6	6.3	3.9	12.0	7.4	15.7	5.6
1960	625.1	506.8	118.3	12.6	9.1	1.7	3.4	12.5	7.0	6.4	4.4	14.6	7.0	13.4	7.8
1961	830.3	666.2	164.1	11.6	10.2	3.0	2.6	13.7	6.4	5.6	5.7	13.4	8.0	10.7	9.3
1962	951.3	759.1	192.2	12.8	10.3	3.0	2.5	13.8	5.6	5.0	6.5	14.2	7.7	12.7	5.9
1963	1,209.2	950.0	259.2	12.6	10.2	2.9	2.5	12.4	5.7	3.8	8.0	16.0	7.7	10.6	7.5
1964	1,403.5	1,128.5	302.0	12.6	11.3	3.1	2.8	13.2	6.1	4.0	7.8	14.4	8.1	8.5	8.1
1965	1,776.4	1,339.8	436.7	14.4	11.5	3.3	2.7	12.8	5.8	3.8	8.0	13.9	6.4	8.9	8.5
1966	2,085.4	1,471.6	613.8	15.4	11.6	3.3	3.0	13.3	6.1	3.5	9.0	12.7	5.2	7.8	9.1
1967	2,496.8	1,887.4	609.4	16.0	11.1	3.2	3.0	13.8	5.9	2.6	9.9	13.3	4.7	6.6	9.9
1968	2,783.3	2,238.1	545.2	16.3	11.5	3.2	2.3	14.4	5.7	2.2	9.7	13.2	4.4	6.6	10.5
1969	3,180.5	2,665.5	515.0	17.3	11.3	3.1	2.4	14.9	5.5	1.7	8.8	12.7	4.3	5.9	12.1
1970	3,799.0	3,301.7	497.3	19.3	11.6	2.8	2.2	15.4	5.0	1.6	8.6	13.2	4.0	5.7	10.6
1971	5,008.7	4,336.1	670.6	20.2	12.1	2.7	2.3	15.4	5.1	1.4	8.2	13.2	4.2	5.4	9.8
1972	6,037.8	5,408.6	629.2	20.4	14.0	2.7	1.9	14.5	4.8	1.9	9.4	12.2	3.9	4.7	9.6
1973	7,413.4	6,983.4	430.0	18.1	16.4	1.9	2.0	14.8	4.6	2.3	9.4	13.1	3.9	3.5	8.9
1974	9,457.8	9,058.0	399.8	19.7	16.4	3.1	2.5	15.5	4.1	1.0	8.7	13.6	3.6	3.0	8.8
1975	11,465.5	11,001.6	463.9	21.4	16.7	3.4	2.9	15.6	4.1	1.2	8.0	12.7	3.3	3.0	7.7
1976	12,403.1	11,565.5	837.6	22.7	15.9	3.7	2.4	16.6	4.8	1.1	7.6	11.4	2.8	2.8	8.2
1977	14,414.2	13,378.2	1,036.0	21.1	12.7	2.9	3.7	14.6	4.3	1.0	6.2	9.0	2.4	2.4	6.8
1978	14,043.9	12,670.7	1,373.2	26.2	15.8	3.5	5.0	17.0	5.1	1.7	7.5	11.5	2.7	2.9	7.2
1979	18,332.7	16,754.8	1,577.9	23.5	13.1	3.4	4.5	15.9	4.7	1.3	5.5	9.5	2.3	2.6	5.7
1980	20,679.9	19,098.3	1,581.6	23.0	12.4	3.0	3.9	16.4	4.3	1.5	5.0	8.4	2.3	2.6	4.9
1981	22,989.7	21,389.1	1,600.6	22.2	11.8	2.9	3.5	16.6	4.0	1.2	5.1	8.5	1.9	2.6	4.4

Source: Compiled by GAO from Nakamura, The Postwar Japanese Economy, p. 137, for 1953-76 figures; Quarterly Bulletin of Financial Statistics, Ministry of Finance, Sept. 1981, for 1977-81 figures.

Social programs are expected to experience budget cuts; e.g., the Japanese National Railway may have to close down some of its more unprofitable routes and raise its rates, the rice support program may be cut, etc. In addition, part of the government effort to restore fiscal balance is to make significant cuts in the size and cost of the central government. The Ministry of Finance has set a medium-term goal of reducing the structural budget deficit 1/ by one-half of the fiscal year 1980 level, shown below, by 1984.

Table 7

General Account Deficit

Fiscal Year	General account	Deficit	Deficit as % of general account	Deficit as % of nominal GNP
	(Y = 100 million)			
1964	33,100	945	2.9%	0.3%
1965	37,230	3,140	8.4	0.9
1966	44,592	7,770	17.4	2.0
1967	51,130	8,338	16.3	1.9
1968	59,371	6,008	10.1	1.1
1969	69,178	5,211	7.5	0.8
1970	81,877	6,775	8.3	0.9
1971	95,611	13,478	14.1	1.6
1972	119,322	20,601	17.3	2.1
1973	152,726	25,394	16.6	2.2
1974	191,981	31,346	16.3	2.3
1975	208,372	59,319	28.5	3.9
1976	246,502	77,625	31.5	4.6
1977	293,466	104,563	35.6	5.5
1978	344,400	118,817	34.5	5.7
1979	396,676	138,925	35	6.2
1980	436,814	151,892	34.8	6.3
1981	467,881	122,700	26.2	(a)
1982	496,808	104,400	21.0	(a)

a/ Not available.

Source: Based on Bank of Japan data and Ministry of Finance "Quarterly Bulletin of Financial Statistics."

1/The deficit in the general account has come to be referred to as a structural deficit because government bonds issued during 1974-82 exceeded the value of construction bonds issued. Government construction bonds were considered justifiable under the post-1965 rules of "sound finance" because they were floated for productive public investment. The remainder of the deficit, funding for social welfare and income transfer programs generally, is not considered justifiable grounds for deficit spending.

From this abbreviated summary of fiscal policy in postwar Japan, several conclusions are worth noting. Fiscal policy for the most part seemed to be coordinated with monetary policy except in the 1973-74 period. Both were geared toward stimulating investment and thereby encouraging growth. Fiscal expenditures from the early postwar period demonstrate the importance attached to industrial growth and highlight the government's role as financial intermediator.

INDICATIVE PLANNING AND ITS CONTRIBUTION TO INDUSTRIAL GROWTH

The development of national, multiyear economic plans began during the Occupation years, with the establishment of the Economic Stabilization Board and the preparation of a number of draft economic plans. The Economic Planning Agency was created by statute in 1955 following the Occupation and was given a specific mandate to prepare national economic plans for Cabinet approval. Japan's national plans typically have included estimates of macroeconomic variables (such as GNP and the balance of payments) and planning targets for achieving specific policy objectives. The plans themselves are not considered rigid or binding; through 1970 they underestimated the actual growth rate of the economy.

The draft plans prepared during the Occupation years focused on economic recovery. The Economic Rehabilitation Plan for 1949-1953 stressed industrial development through the establishment and expansion of key basic industries considered essential to economic reconstruction. Although the plan was not officially adopted, its commitment to rapid reindustrialization remained a cornerstone of Japan's economic policy in the postwar years. Japan's first formally approved economic plan, the "Five Year Plan for Economic Self-Support," was prepared by the Economic Planning Agency and published in 1955.

Although there appears to be no causal link between the national plans and actual growth, these plans serve as an important vehicle in achieving national consensus on long-range economic goals and the direction in which the economy should head. Cabinet approval of the plans provides them with further meaning in a broad national context. The plans therefore legitimized actions taken by the government to encourage industrial growth and allowed government justification of such actions as nationally endorsed.

The aims of the Japanese Government have always been to achieve improved standards of living, and economic stability through economic growth. However, as table 8 outlines, the policy objectives set out by the government to achieve these aims have changed. Earlier plans outline the need to construct and develop industries and infrastructure crucial to an industrialized economy, to encourage savings needed for investment, and to improve efficiency in the labor force and the economy in order to achieve

Table 8

Selected Features of Economic Plans in Japan

Name of Plan	Five-Year Plan for Economic Self-Support	New Long-Range Economic Plan	Doubling National Income Plan	Medium-Term Economic Plan	Economic and Social Development Plan	New Economic and Social Development Plan	Basic Economic and Social Plan	Economic Plan for the Second Half of the 1970s	New Economic and Social Seven-Year Plan
Date published	December, 1955	December, 1957	December, 1960	January, 1965	March, 1967	April, 1970	February, 1973	May, 1976	August, 1979
Cabinet at the time of plan approval	Hatoyama	Kishi	Ikeda	Sato	Sato	Sato	Tanaka	Miki	Ohira
Plan period (Fiscal years)	1956-60	1958-62	1961-70	1964-68	1967-71	1970-75	1973-77	1976-80	1979-85
Economic growth rate: Performance prior to the plan	F.1952-55 8.6%	F.1953-57 7.3%	F.1956-60 9.1%	F.1960-64 11.3%	F.1962-66 10.0%	F.1965-69 12.7%	F.1968-72 10.4%	F.1971-75 5.1%	F.1974-78 4.0%
Economic growth rate: Projection in the plan	F.1956-60 5.0%	F.1958-62 6.5%	F.1961-70 7.8%	F.1964-68 8.1%	F.1967-71 8.2%	F.1970-75 10.6%	F.1973-77 9.4%	F.1976-80 a little over 6%	F.1979-85 5.7%
Economic growth rate: Actual performance plan period	" 8.7%	" 9.9%	" 10.7%	" 10.6%	" 10.9%	" 5.9%	" 4.2%	F.1976-78 5.7%	-
Method for projection	Colm method (Labour x productivity)	Desirable balance chosen from 3 cases with different growth rates	Growth rate previously decided	Econometric model	Econometric model	Econometric model	Econometric model	Econometric model	Econometric model
Aims	Self-support of the economy, Full employment	Maximization of growth, Improvement of national living, Full employment	Maximization of growth, Improvement of national living, Full employment	Rectifying imbalances	Balanced and steady economic development	Construction of admirable society through balanced economic growth	Promotion of national welfare, Promotion of international cooperation	Realization of a richer national life and stable development of our country's economy	Shift to a stable growth path, Enrichment of quality of national life, Contribution to the development of the international economic community
Major policy objectives	Modernization of production facilities, Promotion of international trade, Reduction of dependence on import, Encouraging saving	Improvement of infrastructure, Heavy-industrialization, Promotion of exports, Encouraging savings	Improvement of social overhead capital, Improvement of industrial structure, Rectifying the dual structure of the economy and improvement of social stability	Modernization of low productivity sectors, Efficient use of labour force, Qualitative improvement of national living	Stabilization of prices, Improvement of economic efficiency, Promotion of social development	Improving economic efficiency from an international viewpoint, Securing price stability, Promotion of social development, Maintaining adequate economic growth and cultivating development foundations	Creating comfortable environment, Securing a stable and comfortable life, Stabilization of prices, Promoting international cooperation	Stability of Prices and Securing of full employment, Securing of stabilized life and Creation of favourable living environments, Cooperation with and Contribution to the development of world economy, Securing of economic security and Fostering of grounds for long-term development	Attainment of full employment and stabilization of prices, Stabilization and enrichment of national life, Cooperation in and contribution to the development of the world economy and society, Ensuring economic security and fostering the foundations of further development, Reconstruction of public finance and new monetary responses.

Source: Economic Planning Agency 1981.

economic growth and improve living standards. As the Japanese economy developed, however, increasing social needs arose which could not be satisfied by industrial development or development of key industrial sectors alone. For example, pollution concerns became increasingly intense as did the need to encourage adjustment for declining industries and the unemployed. Moreover, the plans, particularly in the 1970s, stress the need to achieve economic security as reflected in government efforts to conserve resources and energy and develop technology. The important shift in emphasis has been away from strict concentration on reconstructing industry by encouraging and supporting investment in capital equipment as a means to achieve goals of full employment and high economic growth. Rather, in the aftermath of the economic disruptions of the 1970s, emphasis today is being placed on assisting industry to meet environmental and pollution control standards, to cooperate in conserving resources and energy, to develop advanced technology, and to phase out or adjust to reduced profits, underutilized capacity, unemployment, etc., in order to achieve stable development and economic security for Japan.

Although national plans constitute a forecast of the direction of the economy rather than a rigid setting of targets, it should also be noted that more specific planning does take place at the sectoral level. Certainly in the postwar years the government intervened significantly in the development and direction of specific industries. National plans provided a basis for discussions between government and industry in establishing specific industry plans. Chapter 3 discusses this process in detail.

CONCLUSIONS

Recent economic conditions, both international and domestic, have lessened monetary and fiscal authorities' ability to continue support for rapid economic development. As more and more avenues of financing open up to Japanese companies, credit rationing by monetary authorities has become less effective as a tool for influencing industrial development. As government-set interest rates move closer to those established in the free market and financial regulations are eased, the dependence of the city banks on the Bank of Japan lessens. Hence, those aspects of monetary policy which have contributed to Japan's postwar growth are no longer as effective as they once were.

Today Japan is still faced with massive budgetary deficits. At the same time, the government is being pressured to provide social amenities, address environmental concerns, assist declining industries, and provide retraining for the unemployed, while continuing to assist potential growth sectors. Increased difficulty in floating bond issues and declining savings rates will make pressure to fulfill such demands even more severe. International and domestic factors have changed the complexion and nature

of Japanese monetary and fiscal policy and, thus, their contribution to industrial policy significantly. Moreover, these factors have contributed to significant changes in the powers and tools of those government agencies involved with implementing industrial policy goals.

CHAPTER 3

INDUSTRIAL POLICY AND ITS INSTRUMENTS HAVE EVOLVED OVER TIME

Japan's postwar economic development, following the Occupation period, can be roughly categorized into four stages. During the first stage, beginning in 1951 and lasting until approximately 1954, Japan concentrated on economic reconstruction and the rebuilding of basic industries. In the 1955-64 period of industrialization, the government focused on "catching up" with other industrialized countries and emphasized the growth of various other industries including petrochemicals and automobiles.

There is a discernible break between these first two stages of Japan's growth and its economic development in the late 1960s and the decade of the 1970s. By the mid-1960s, Japan had largely achieved its postwar development goals, and from 1965 to about 1975, it began placing growing emphasis on technology and social development and welfare issues. Since then, following the economic turbulence of the early 1970s, Japan has focused on adjusting to stable growth, resource conservation, improving the quality of life of its citizens, and the continued development of technology as the primary means of supporting industrial development. Table 9 summarizes the policy goals and major industry targets during four stages of Japan's industrial development.

The goals of industrial policy, and the mechanisms available to implement these goals, have likewise evolved as Japan's economy has changed and developed. In the early postwar years, the policy goals were primarily sector-oriented; government and business addressed themselves to rebuilding specific industries and sectors of the economy. The government also had a number of powerful instruments to effect economic growth and development, notably its foreign exchange and trade controls. The policy goals have gradually shifted from sector-specific to more general policies potentially benefiting numerous sectors. Because of potential cross-industry applicability of the technologies developed, such support today benefits the computer, robotics, biotechnology, and aircraft industries, among others. Equally significant, the government, most particularly MITI, no longer possesses the power it once had to direct the course and speed of industrial development. Exploring this evolution--in the policy goals and the means available to achieve them--is critical to an understanding and appreciation of Japan's industrial policy.

GOAL SETTING: THE INDUSTRIAL PLANNING PROCESS

As discussed in chapter 2, Japan has in the postwar years prepared a series of national economic plans which generally

Table 9

Changes in Government Policies and Targets: 1951 to Present

Period	Policy needs & targets	Important fields
1951-1954	Reconstruction of economy and independence of economy	Electric power, coal mining, ocean shipping, iron and steel
1955-1964	Catch up with developed countries	
	°Encourage heavy and chemical industries	Machine and electric machine, synthetic fiber, Petro-chemical, nuclear power
	°Prepare for open economy	Petro-chemical, automobile, spinning, ammonia, computer
	°Improvement of international balance of payment	Ocean shipping, hotel
	°Improvement of area gap	Regional development, private railroads
1965-1974	Social Development	Urban development, regional development, improvement of the quality of life (pollution prevention, etc.)
	Social Welfare	Housing industry, national welfare facility, safety measures
		Development of domestic technology, fostering domestic computer
		Fostering domestic petroleum companies, domestic nuclear power equipment
1975-	Stable development of economy	Resources and energy
		(conservation of resources and energy, storing oil, energy diversification)
		Development of technology
	Improvement of the quality of life	Urban development, regional development, improvement of the quality of life

Source: Japan Development Bank, 1981.

attempted to forecast the direction and growth of the economy. More specific planning, primarily at the direction of MITI, however, does take place at the sectoral and industry level and provides a key to the process of industrial planning in Japan. The steel and shipbuilding industries offer cogent examples of the government-industry role in industrial planning in the early postwar years and illustrate the breadth and depth of government involvement in developing and ensuring the success of plans for those industries' reconstruction and growth.

In the steel industry, emphasis was first directed to restoring steel production capacity; the onset of the Korean War in 1950 and resultant increasing demand for steel helped to focus on the need to expand capacity. The Cabinet accordingly directed MITI to develop a growth strategy, which it did in consultation with the industry itself. The result was the First Rationalization Plan, two primary objectives of which were to increase existing plant productivity and to construct new capacity. Government assistance in achieving those objectives was provided through tax benefits, direct government loans, and government-supported loans from other financial institutions.

The Japanese Government also implemented a structured shipbuilding program. Under "planned shipbuilding," begun in 1947, the government annually determined the number of ships to be constructed. The shipbuilders selected to construct the vessels were then provided with Japan Development Bank loans on highly favorable terms.

It would be misleading, however, to suggest that even during this period complete unanimity existed between government and industry, or indeed between government agencies, concerning the appropriate industrial policies vis-a-vis a given industry. For example, during 1949-51, MITI and the Bank of Japan disagreed over the fundamental issue of whether to sponsor the development of a domestic automobile industry. The debate was resolved in favor of the MITI position, and MITI subsequently went on to develop plans for the industry's development. MITI's efforts to rationalize and consolidate the industry in later years were, however, frustrated by the opposition of auto producers.

Formalized planning begins in 1964

Postwar industrial planning began during the Occupation years, although the first official plan was not adopted until 1955. The planning process became more formalized in 1964 with the creation of the Industrial Structure Council. The Council, an advisory body within MITI composed of representatives from academia, industry, consumer groups, and labor unions, prepares decade-long MITI "Visions" setting forth comprehensive general industrial goals. Visions have been drawn up for the decades of the 1960s, 1970s, and 1980s. These Visions are supported and supplemented by sector-specific plans drawn up by the Council's subcommittees. The purpose of such planning is to reach

agreement on the general desired direction of the industrial sector; according to MITI officials, this public-private sector consensus building constitutes one of the Industrial Structure Council's major contributions to the implementation of industrial policy.

The emphasis of recent industrial planning has been on developing a technology-intensive industrial sector composed of high value added and resource-conserving industries. These factors form the government's criteria for targeting assistance. Targeted assistance in the past was largely aimed at developing the production processes of a given basic industry with "feeder" or "linkage" effects for other industries; e.g. efficient steel production benefits development of the auto industry while development of the auto industry is linked to development of a parts industry. Today, targeted assistance is directed more and more toward products or processes that can make a contribution across the industrial base, not merely in one industry as has been the case in the past. Original and innovative technology is to provide the foundation for stable growth, just as steel provided a foundation for rebuilding the postwar Japanese economy. Technological advances are also expected to have a positive impact on environmental and social issues. Thus, the multiplier effect of technological innovations has become key in determining where in the economy the government will direct its assistance.

The general goals discussed above were outlined in the MITI Visions for the 1970s and 1980s. The 1980s Vision also included concerns with conserving resources, particularly energy. Although industries have not been designated as targets, per se, a number of industries were specified as meeting the criteria of low resource and energy use and high technology and high value added. Computers and aircraft and, later, robotics were all included.

THE EARLY POSTWAR YEARS: JAPAN MARSHALS AN IMPRESSIVE ARRAY OF POLICY INSTRUMENTS TO DIRECT ECONOMIC RECONSTRUCTION

Japan's commitment to economic reconstruction was manifested in the development of a number of institutions and mechanisms designed to achieve its postwar economic goals. These industrial policy instruments--including the use of the banking sector to channel funds for industrial growth, controls on trade and foreign exchange, regulation of foreign investment, and easing of antimonopoly legislation to permit, for example, industry rationalization--provided the government with a powerful array of tools with which to pursue the country's industrial and economic goals.

Public and private financial institutions together finance industrial growth

Various banking laws enacted in the early postwar years created financial institutions charged principally with providing funds to industries for economic reconstruction and

development. The Japan Development Bank and the long-term credit banks, 1/ through loans to basic industries and later to other growth-targeted industries, supported the government's economic priorities. Equally important, by absorbing much of the risk associated with loans to specified industries, these banks encouraged and supplemented city bank lending. The Bank of Japan exercised indirect control over the lending patterns of banks, principally through credit rationing, the purchase of long-term credit bank issues, and recommendations to both the long-term credit banks and the city banks, on the placement of loans with certain industries.

The Japan Development Bank

The Japan Development Bank (JDB) was established in 1951 pursuant to the Japan Development Bank Law, and originally was tasked with promoting economic reconstruction and industrial development. As a fully owned government financial institution, the JDB acquires loan funds from the Fiscal Investment and Loan Program, by issuing external loan bonds and notes and from receipt of loan repayments.

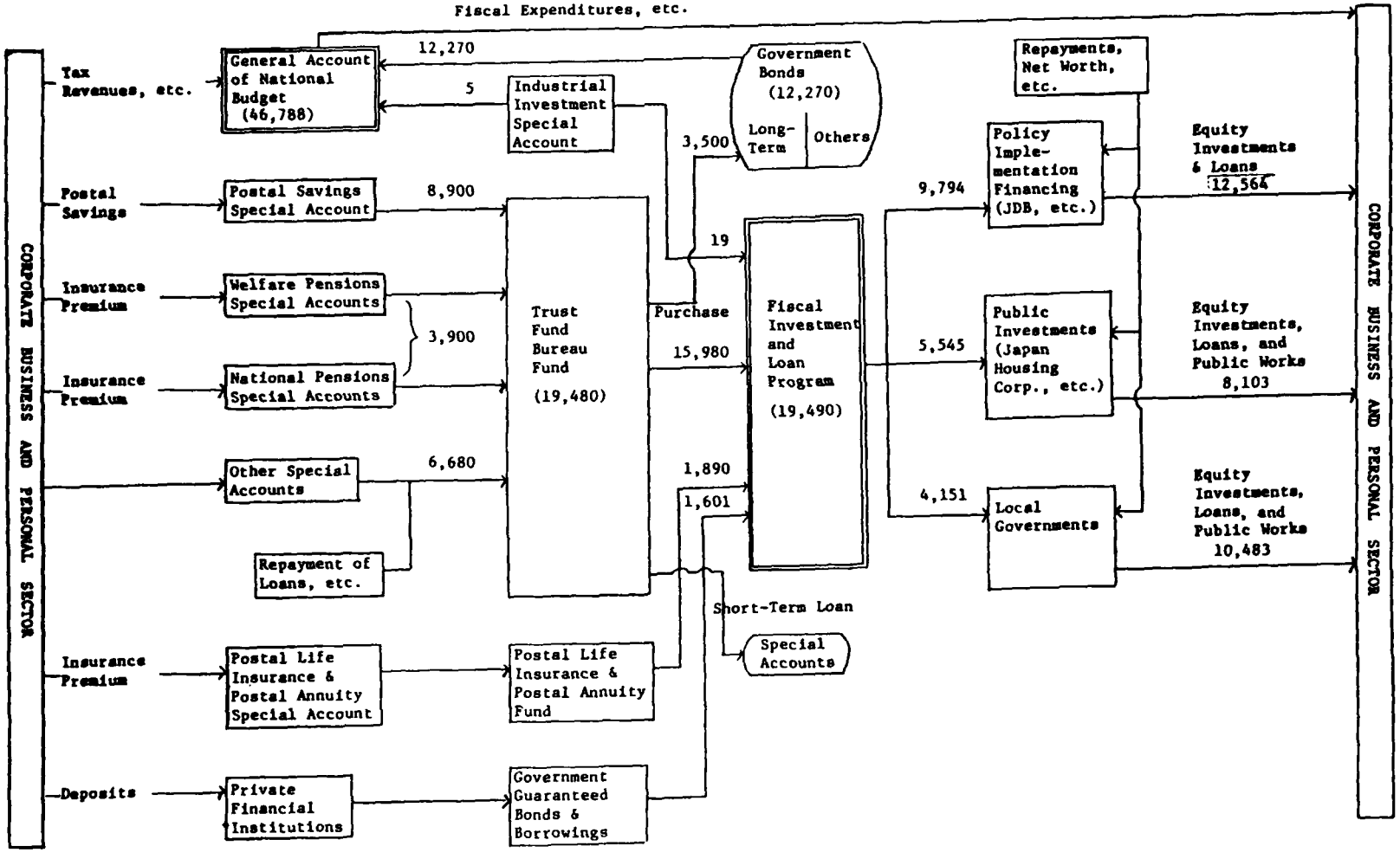
As chart 1 shows, the FILP derives the most significant portion of its funds from postal savings accounts. In addition, a small percentage of funds is allocated to the FILP through the Industrial Investment Special Account. Government-guaranteed borrowings and bonds also contribute to the program. Total FILP funds are then allocated for financing industrial development, for public investments, and to local governments for public works. As shown in the chart, the most significant allocation of FILP funds is through government financial institutions such as the JDB, the Export-Import Bank, and so on.

According to JDB officials, the Bank's primary aim is to implement the government's economic policy goals. Those goals, generally defined in the multiyear economic plans, are translated by the JDB into specific loan programs in consultation with MITI. The correlation between JDB loans and economic policy goals is striking; in the first phase of postwar industrial development close to 85 percent of JDB loans went to the four basic industries targeted by the government for reconstruction.

1/The three long-term credit banks are private banks whose principal source of funds derives from the sale of 1-year discount debentures and 5-year coupon debentures to banks, corporations, and individuals. Their principal activity has been providing long-term funds for investment in capital equipment and working capital for Japanese companies. The latter category has become more important in recent years as industries receiving long-term credit bank funds are no longer the capital-intensive, basic industries.

Chart 1

Fiscal Investment and Loan Program (F.I.L.P.)



Note: Figures based on initial budget of the program for fiscal year 1981 in billions of yen.

Source: Japan Development Bank.

As government economic priorities gradually shifted to other industries in the late 1950s and early 1960s, so too did JDB loan patterns. Table 10 shows JDB loans by project area from 1951 to 1981.

Table 10

JDB Loans by Project Area
(yen-billions)

New Loans

(in billions of yen)

Fiscal year	1951–1955	1956–1960	1961–1965	1966–1970	1971–1975	1976–1980	Outstanding at March 31, 1981	
								$ million
Resources and energy	¥117.4	¥118.1	¥112.7	¥157.0	¥298.5	¥1,111.8	¥1,377.2	$6,527
Development of technology	1.1	13.7	56.2	149.9	325.1	488.5	421.0	1,995
Ocean shipping	64.1	82.7	202.0	483.2	501.7	315.3	565.1	2,678
Urban development	1.7	5.4	27.8	149.4	485.0	725.2	1,076.5	5,102
Regional development	—	10.3	121.7	216.9	433.6	643.0	685.4	3,248
Improvement of quality of life	0.8	0.6	3.6	17.7	613.1	854.9	1,007.3	4,774
Other development loans	89.3	71.9	148.6	189.1	170.5	210.1	260.1	1,233
Total	¥274.4	¥302.7	¥672.6	¥1,363.2	¥2,827.5	¥4,348.7	¥5,392.6	$25,557

Component Ratios of New Loans

(%)

Fiscal year	1951–1955	1956–1960	1961–1965	1966–1970	1971–1975	1976–1980	Outstanding at March 31, 1981
Resources and energy	42.8	39.0	16.8	11.5	10.6	25.6	25.5
Development of technology	0.4	4.5	8.4	11.0	11.5	11.2	7.8
Ocean shipping	23.4	27.3	30.0	35.4	17.7	7.2	10.5
Urban development	0.6	1.8	4.1	11.0	17.2	16.7	20.0
Regional development		3.4	18.1	15.9	15.3	14.8	12.7
Improvement of quality of life	0.3	0.2	0.5	1.3	21.7	19.7	18.7
Other development loans	32.5	23.8	22.1	13.9	6.0	4.8	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: (1) Loans in past years were classified in different ways, but they are reclassified as precisely as possible in accordance with the present way of classificaiton.

(2) Outstanding loans at March 31, 1981 include outstanding investment of 8 billion yen, but exclude outstanding foreign currency loans of 5.5 billion yen.

Source: Japan Development Bank

From its establishment through the late 1950s, the JDB focused on the reconstruction of the economy by extending loans to the steel, coal mining, ocean shipping and electric power industries. Beginning in the early 1960s, this Bank began to provide loans for the chemical and automotive industries as well

as the machinery, electronics and synthetic fibers industries. From the late 1960s to the early 1970s, resource and energy development began to decline in significance while loans for technology development, and improvements in the quality of life (e.g., pollution control) grew. By the last half of the 1970s, in the aftermath of the oil shock, the Bank's loans for resource and energy development and security, again took on increased significance, while pollution control and urban development maintained their significance.

JDB implements the government's economic policy goals. Its loan patterns, outlined in table 10 and chart 2, show the growing importance attached to adjusting to stable industrial and economic growth, as reflected in loans for energy and resource development and development of technology. Moreover, significant growth in loans for quality of life, and regional and urban development loans designated for pollution control, relocation of industries to underdeveloped regions and construction of housing, offices, merchandise distribution centers, etc., demonstrate that social development goals have also become an important policy target of the government.

Foreign Exchange and Foreign Trade Control Law proves powerful tool of government

In the postwar years, the Japanese Government used a number of mechanisms to regulate trade. The most powerful of these was the Foreign Exchange and Foreign Trade Control Law enacted in 1949 under which the government allocated foreign exchange for import purchases. Although minor changes were made to the law after Japan regained its independence, its basic tenets remained fundamentally intact during the 1950s and early 1960s; the law itself was sufficiently broad to permit flexibility in its actual application.

Japan's resort to the use of foreign exchange controls has been ascribed to the need to ensure stability in its balance-of-payments position. The difficulties the government faced in the postwar years in acquiring and maintaining adequate foreign currency reserves--stemming from the import demand created by the wartime depletion of supplies and destruction of capital equipment and the inability of the war-damaged economy to generate significant export sales--provided a reason for exchange controls. 1/

It should be noted, however, that the Foreign Exchange and Foreign Trade Control Law also provided the government with a highly effective tool for allocating resources to specific sectors

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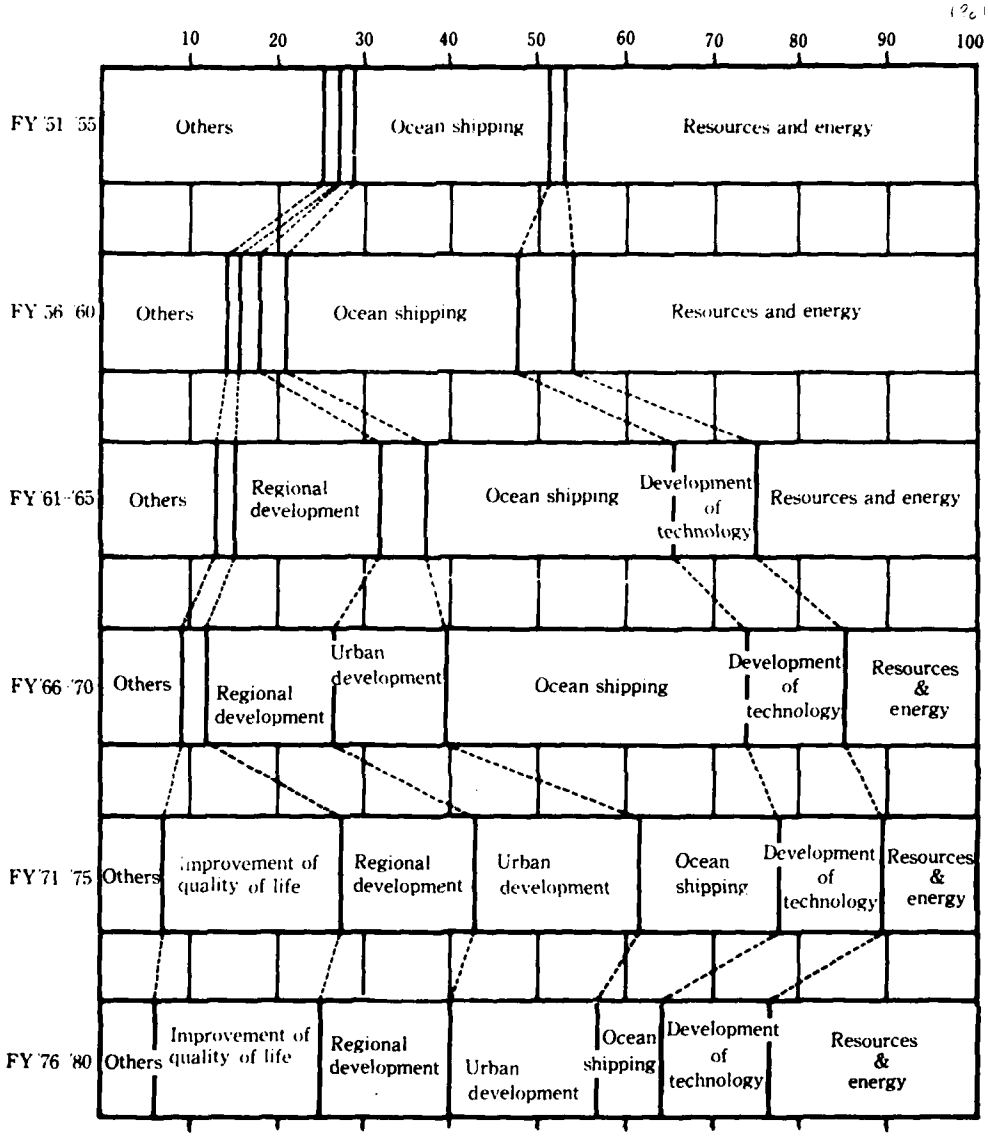
1/There were other actions available to, and exercised by, Japan in controlling its international payments position, such as clearing accounts to finance bilateral transactions and barter trade.

of the economy. Through rationing of foreign exchange for import transactions, the government was able to control the types and volumes of imports needed by those industries deemed central to

Chart 2

New Loans by Project Area (component ratios)



Source: Japan Development Bank

economic reconstruction and development. By the same token, restrictions on imports offered a means of protecting and strengthening domestic industry by reducing foreign competition.

The foreign exchange and import control system set up in accordance with the Foreign Exchange and Foreign Trade Control Law functioned essentially through a budget and licensing system. Under this system, a foreign exchange budget was drawn up and approved by a ministerial council. 1/ The budget, based on a forecast of available foreign exchange for the budget period, normally established the type and volume of goods to be imported, the source of those imports, and the currency of payment.

Following approval of the foreign exchange budget, MITI issued "imports announcements" informing prospective importers of approved import items. Importers would then be required to obtain import licenses in accordance with various allocation systems.

An added measure of control over imports was exercised through the import collateral system, which required importers to deposit a certain percentage of the value of the proposed imports (a margin determined by MITI). Failure to import the goods resulted in forfeiture of the deposit unless legitimate cause could be demonstrated. The import collateral system was in part intended to discourage speculation in imported merchandise; by raising the collateral margin, it could also be used as a means of suppressing import demand in correlation with tighter monetary policy.

The actual composition of Japan's imports in the early 1950s reflects the directing of imports to redress shortages in foodstuffs and basic raw materials needed for economic reconstruction.

As Japan's economy improved, exchange restrictions gradually eased. Improved export performance allowed for a corresponding expansion of the foreign exchange budget by the latter half of the 1950s and greater recourse to an automatic approval system for licenses (essentially the automatic approval of licenses for designated items within the confines of the foreign exchange budget allocations).

Commercial policies protected developing industries

Tariffs

Japanese tariffs were revised during the occupation years with new tariffs in place by 1951. As of 1958, approximately

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1/Chaired by the Prime Minister and composed of the Ministers of Finance, International Trade and Industry, Foreign Affairs, Agriculture and Forestry, and Transportation and the General Secretary of the Economic Planning Agency. The President of the Bank of Japan served as an advisory member.

one-fifth of import classification items--primarily raw materials--were duty-free, with the remainder subject to duty rates ranging from 5 to 50 percent ad valorem. Not surprisingly, duty rates for specific items depended on the priority attached to the imported product. Lower rates normally were applied to such items as drugs, foodstuffs, and other raw materials, while higher, protective rates usually were applied to manufactured goods--those most likely to compete against domestic manufactures or those whose production Japan sought to encourage.

The government also periodically granted temporary exemptions from, or reductions in, duties on specific import categories, notably raw materials and industrial machinery required for industrial reconstruction and growth.

Quotas

Import quotas did not take on great significance until the mid-1960s. However, in the early postwar period, characterized by a scarcity of foreign exchange, allocations of available foreign exchange to specific sectors through the foreign exchange budget and import control system empowered the government to control the kinds and quantities of goods imported.

In the late 1950s, Japan also employed export quotas, 1/ although these quotas were not of great importance until the early 1970s.

Export incentives

Another feature of Japan's commercial policy has been the various incentives employed to regulate exports. In addition to the tax incentives and export cartel legislation discussed below, Japan in the 1950s resorted to link trading as a means of encouraging exports. Generally, under the link system, exporters of designated commodities were authorized to import various types of goods. Because of the concurrent foreign exchange and import restrictions, these imported goods commanded high profits in the domestic market, thereby providing the favored exporters with added revenues. A second system permitted exporters to retain a percentage of the foreign exchange generated from their exports, which could be used, for example, to finance overseas marketing efforts or to purchase other import goods.

Link trading was discontinued in 1954 because of foreign objections. According to the United States Tariff Commission, now the U.S. International Trade Commission, the foreign exchange retention system declined in significance by the late 1950s as foreign exchange became less scarce.

1/In 1956 and 1957, Japan imposed quotas on textile exports to the United States.

Regulation of foreign investment: a successful means of gaining technology and technological know-how

The Foreign Exchange and Foreign Trade Control Law provided the general mechanism for regulating external transactions. In tandem with that law, the Foreign Investment Law was enacted in 1950 to specifically regulate the flow of foreign capital into Japan. Its intent was to encourage that foreign investment which would contribute to Japan's economic development and balance of payments position.

The Foreign Investment Law enumerated the various types of foreign investment subject to the law, and set forth criteria for approving such investments. The criteria were both positive and negative. For example, one of the positive criteria stipulated that an investment contribute to the development of important industries; on the negative side, approval could be withheld if the investment were perceived to adversely affect economic recovery. 1/

In the early postwar years the government, in recognition of the vulnerable state of the economy, exercised a high degree of caution in approving foreign investment, particularly forms of direct investment. Such restrictions were essentially motivated by the fear of foreign control of Japanese industry and the desire to limit foreign investment--and attendant repatriation of earnings--in the interest of husbanding scarce foreign exchange. Accelerating economic development through the acquisition of foreign technology was emphasized.

The acquisition and use of foreign technology was considered a key component of Japan's economic revitalization and growth strategy. MITI, with its jurisdiction over industrial development, played a key role in approval of industrial technology imports. To better guide the inflow of needed technologies, MITI periodically issued lists detailing the kinds of desired technologies by specific industry. Given the precarious state of the postwar economy, technology imports primarily acquired through licensing arrangements provided a relatively easy and safe means of closing the technology gap created during the war years.

The government exercised tight control over the import of technology in the 1950s, thereby directing technological processes and know-how to those industries targeted for growth. The Foreign Investment Law provided the principal legal basis for regulating technology contracts; firms were required to submit proposed transactions to the cognizant government ministry for approval.

1/Robert S. Ozaki, The Control of Imports and Foreign Capital in Japan (New York: Praeger Publishers, 1972), pp. 167-68.

Government control over technology imports influenced not only the composition of imported technology but also the terms on which it was purchased and the structure of Japanese industry. The required approval of technology import contracts allowed MITI to intervene in order to achieve more favorable contract terms; a 1968 OECD study 1/ charged that approval of contracts was conditioned on, for example, changes in the scope of the technology and reduction in royalty payments.

Relaxation of Antimonopoly Law: cartels restrain trade

Japan's antimonopoly legislation is a legacy of the Occupation era and reflects the antitrust principles espoused by its American sponsors. As originally enacted in 1947, the Antimonopoly Law prohibited private monopolies, participation in cartels, and such activities as price-fixing. Restrictions were placed on stockholding, multiple directorates, mergers, and acquisition of assets. Japan's Fair Trade Commission was created as the agency tasked with enforcement of the law's provisions.

The Antimonopoly Law was amended in 1953, loosening restrictions on stock retention and interlocking directorates and mergers and also authorizing depression and rationalization cartels. Those changes, as well as certain legislated exceptions from the law and passive enforcement by the Fair Trade Commission, provided the government with a certain latitude, particularly with respect to encouraging the formation of cartels.

Cartels have been utilized by the Japanese in various industries as a means of controlling foreign trade, regulating production and prices in periods of recession, encouraging industry rationalization, and allocating market share. The 1953 amendments to the law permitted the establishment of depression and rationalization cartels. Other cartels have been legislatively exempted from the provisions of the Antimonopoly Law as well. For example, the Export-Import Trading Law legalizes the establishment of import cartels, in accordance with certain requirements, whose members can regulate import quantities and price.

MITI has also exercised administrative guidance as a means of regulating production. Such "guidance cartels" generally functioned through notifying either individual producers or an industry association of desired production cuts after some prior industry consensus had been achieved. Guidance cartels provided a flexible means in the 1950s of coping with excess production (notably following the Korean War boom); during that period MITI, through its

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1/ As discussed by Terutomo Ozawa, Japan's Technological Challenge to the West, 1950-1974: Motivation and Accomplishment (The Massachusetts Institute of Technology, 1974), pp. 53-54.

control over foreign exchange and imports, also possessed the power to ensure "voluntary" compliance. 1/ MITI's use of administrative guidance cartels was essentially discontinued in the mid-1960s, as Japan's Fair Trade Commission gained increasing strength.

Tax measures

Japanese tax policy has been directed to stimulating economic growth, and a number of tax measures have been employed since the postwar years to foster industrial expansion and encourage exports. The enactment of special tax measures to benefit economic growth was especially noticeable in the early 1950s, and included accelerated depreciation for certain industrial equipment, a special export income deduction, a tax-free reserve for export losses, and reduced tax rates for interest and dividends. In later years, some of these measures were amended or withdrawn, but many survived into the 1960s. Observers are divided with respect to the effectiveness of such measures.

The steel industry provides an example of tax measures used. As part of an industry rationalization plan developed by MITI, five tax and duty exemptions affecting the steel industry were adopted in the 1951-52 period, including 2/

--import duty exemptions on designated steelmaking equipment;

--a 50 percent increase in the depreciation base allowed on designated equipment;

--tax exemptions for reserves to cover price changes in inventories and securities;

--tax exemptions for revaluation of assets; and

--tax exemptions for additional bad debt reserves.

This plan, which included other financial assistance, led to the doubling of crude steel production over the plan period (1951-54).

1/The Japanese steel industry offers an illustration of the guidance cartel in operation. Overcapacity in the industry owing to the mild recession of 1957 engendered severe price-cutting, and informal consultations between MITI and the industry were held to reach a consensus solution. As a result, the "open price system" was instituted, which permitted the major steelmakers to cooperate in setting prices and adjusting production.

2/Ira C. Magaziner and Thomas M. Hout, Japanese Industrial Policy, pp. 46-47.

Tax measures of this nature meant that writeoffs for industries which Japan sought to develop were high. In addition to ordinary depreciation, which allowed first-year depreciation of as much as 18.2 percent, the Enterprise Rationalization Law of 1952 provided that an additional 25 percent first-year depreciation could be employed by designated industries. 1/ During the 1950s and early 1960s, additional depreciation deductions could be taken for strong export performance, first as tax writeoffs and later as deferral of income. Criticism from the GATT in 1964 forced Japan to change this system to a 5-year deferral scheme. Between 1964-72, there were two such schemes to encourage export strength--a "basic" accelerated depreciation and a "supplemental" accelerated depreciation. The basic accelerated rate was computed on the proportion of exports to total sales multiplied by a stipulated percentage figure which varied from 80 to 100 percent. The "supplemental" accelerated depreciation rewarded incremental improvement in export performance; allowances were based on a comparison of export sales in the present and preceding accounting periods (semiannual or annual) and permitted an increase in the standard accelerated depreciation of between 30 and 60 percent. The net effect of these depreciation allowances--standard depreciation plus rationalization allowance, and basic accelerated and supplemental accelerated depreciation--was to give growing industries a tremendous cash flow advantage. In some cases, assuming a 40 percent export ratio, companies could depreciate up to 52.5 percent of their equipment in one year. 2/

In addition, a reserve for overseas market development, in effect from 1964 through 1972 when it was eliminated for large enterprises, was created as a 5-year tax deferral arrangement on the same basis as the provision for accelerated depreciation for strong export performance. The steel and automobile industries were notable in their claims under this provision. Table 11 summarizes export promoting tax measures in Japan.

MITI'S POWER AND INFLUENCE OVER INDUSTRY WANE AS INDUSTRIAL POLICY INSTRUMENTS CHANGE

As Japan's economy grew in the mid-1960s, the nature of industrial policy also changed. As was true for monetary and fiscal policy, industrial policy was in a transitional phase in the mid-1960s. Basic industries had essentially been rebuilt, while other industries such as autos and consumer electronics were,

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1/These industries included fertilizers, petrochemicals, steel, forging, construction and industrial machinery, electronics, automobiles and parts, and aircraft, among others.

2/For more detailed discussion of these depreciation allowances, see GAO's Report to the Congress, United States-Japan Trade: Issues and Problems; (ID-79-53).

Table 11

Export Promoting Tax Measures

Dates when measure was in operation	Measure
1953-1964	Export income deduction. This measure directly shielded export income from taxation.
1953-1959	Export loss reserve system. A reserve against the possibility of cancelled export contracts was non-taxable.
1953-1959	Special depreciation for overseas offices of trading companies. All depreciable assets in a new office overseas were subject to a 50 percent write-off the first year.
1959 to present	Technology export income deduction. Companies are allowed to deduct a portion of royalties paid from abroad from their taxable income. The objective is to stimulate saleable technology development.
1964-1972	Overseas market development reserve. A small portion of the revenue from current exports can be put into reserves from taxable income. Like all Japanese reserves, this must later be returned to the income stream. This provision still applies for small businesses.
1964 to present	Overseas investment loss reserve. A small percentage of current foreign investment expenditure each year can be put into reserve to insure against investment losses. This reserve fund is non taxable.
1964-1972	Export accelerated depreciation. Accelerated depreciation was allowed on capital investment where the output was to be exported. The degree of acceleration depended on the proportion of plant and equipment devoted to export.
1968-1978	Export special depreciation. This is an overlay acceleration on the previous provision.
Early 1950s to present	Free trade zone investment loss reserve. This measure is a variation on the overseas investment loss reserve extended for free trade zones.

Source: Magaziner and Hout, Japanese Industrial Policy.

by the late 1960s and early 1970s, beginning to attain international standing. The government began to recognize that continued growth and health of the economy would largely depend on the ability to move into high technology and value added industries. At the same time, Japanese authorities, recognizing that the redevelopment goals of the postwar period had been largely achieved, began to focus increasingly on social welfare, public works, and the consumer.

International events of the early 1970s further encouraged this reevaluation process. The collapse of the Bretton Woods system, the oil crisis, and serious inflationary pressures led the Japanese Government to encourage "stable economic growth," rather than the previously desired rapid growth.

Trade liberalization

Japan's tight control over imports, exercised through the Foreign Exchange and Foreign Trade Control Law, began gradually to loosen up by the 1960s as the economy improved and Japan faced increasing international pressure to liberalize trade. In 1960, the government adopted a plan aimed at liberalizing 80 percent of imports within 3 years; items were liberalized on a product-by-product basis, through placement on automatic import license approval lists. The government, however, was careful to protect key industries considered central to Japan's future economic development; products from consumer electronics, heavy electrical machinery, and the automotive industries, for example, were not included in the liberalization plan.

In 1964, the foreign exchange budget system was abandoned when Japan became a signatory to Article VIII of the International Monetary Fund. Up to that time, foreign exchange allocations through the foreign exchange budget and import control system served as the basis for restricting imports. With the loss of the foreign exchange budget system, import quotas and tariffs took on increased significance in protecting domestic manufacturers from foreign competition. In April 1964, Japan had 174 items subject to quota restrictions; by October 1969, the number had been reduced to 161.

Participation in the Kennedy and Tokyo rounds of the Multilateral Trade Negotiations pressured Japan into further trade liberalization as its trade balance went into surplus with many of its major trading partners. Today, Japan retains formal import quotas on 27 items, including agricultural, livestock, leather, and related products. Full implementation of the Tokyo round tariff reduction agreements in 1987 will leave Japan with a trade-weighted average tariff level lower than that of the United States and the European Economic Community. 1/

1/Japan agreed in April 1982 to accelerate and implement tariff cuts scheduled under the Multilateral Trade Negotiations agreements for reduction in fiscal years 1983 and 1984.

During the 1970s, as tariffs and quotas began to decline in significance, non-tariff barriers were recognized as causing disruptions in the flow of trade. Japan, like other trading nations, was increasingly criticized for its non-tariff barriers. Product standards, testing, labeling, and certification procedures have presented particular problems in Japan's trade relations, as have product approval procedures. In the last few years, Japan has also been increasingly criticized for formal and informal barriers to trade in services; e.g., banking, telecommunications, etc.

Capital liberalization

Japan has historically been cautious of the risks associated with a widespread, massive introduction of foreign capital, and as a result proceeded cautiously in the late 1960s to liberalize capital movements. The government, as it did in trade liberalization, took deliberate steps to minimize the impact of capital liberalization on infant and weaker industries.

Japan's first major liberalization of capital transactions occurred in July 1967 following a June 1967 policy decision by the government concerning the liberalization of foreign direct investment. The policy thus established included (1) the government's stated intent to liberalize substantially broad areas of the economy by March 1972 and (2) an emphasis on increasing the number of sectors in which 50-50 joint ventures would be automatically approved, although efforts would be made to also increase the number of industries given automatic approval for up to 100 percent, foreign-owned subsidiaries.

In July 1967, 50 industries were liberalized--33 were placed in category 1 (automatic approval of up to 50 percent foreign ownership) and 17 in category 2 (up to 100 percent foreign ownership). This liberalization, however, as well as succeeding ones, applied only to newly established enterprises. By approximately the end of 1970, 524 industries were liberalized--447 in category 1 and 77 in category 2. In September of that year, the government also raised the ceiling on the total amount of foreign equity holding in an existing firm from 20 percent to less than 25 percent of total capital. 1/

Those industries placed in either category 1 or category 2 were selected on the basis of judgments concerning an industry's international competitive position. Industries considered strong were placed in category 2, those less competitive in category 1. Infant industries where technological gaps existed--such as computers--were exempted from liberalization.

Japan's capital liberalization actions in the late 1960s have been described less as a measure of its willingness to encourage

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1/Organization for Economic Cooperation and Development, The Industrial Policy of Japan (Paris: OECD, 1972), pp. 140-42.

foreign investment than as the enforced need to fulfill international obligations. Liberalization was accompanied by precautions to protect weaker industries and was postponed for industries engaged in structural reorganization or considered not yet competitive.

Since 1975, foreign direct investment in almost all industrial categories has been under an "automatic approval" system whereby applications were approved routinely within a 90-day period. 1/ This system was further liberalized with the 1980 amendments to the Foreign Exchange and Foreign Trade Control Law and with repeal of the Foreign Investment Law in the same year. The amendments shifted foreign investment from an automatic approval to a prior notification system, although the Ministry of Finance still retains some powers to review investment proposals which may pose a serious threat to Japan's economy or national security. Additionally, foreign exchange approvals required for remittance of funds under the old law have been eliminated in certain cases.

Although under the new amendments foreign investors are not required to obtain certificates of approval, they still must file lengthy reports in Japanese with the Bank of Japan. After filing, there is a 15-day waiting period. In cases where the government does screen an application for reasons of national security, the new law establishes a 5-month deliberation limit.

Technology import liberalization

As Japan's economy and balance of payments position improved, controls over the import of technology were gradually eased. The first such major relaxation occurred in 1959, when approval was broadened to include technologies related to consumer goods.

Wide-scale liberalization of technology imports did not, however, take place until 1968. At that time, all technology contracts with compensations less than $50,000 for certain industries could be automatically approved. 2/

Amendments to the Foreign Exchange and Foreign Trade Control Law in 1980 established the general principle that notification of a technology license agreement be filed 30 days prior to the conclusion of the agreement for transfer of technology. Under a recent ministerial order, this 30 day period is not required and agreements can be concluded in all but the most sensitive areas; e.g., armaments, aircraft, atomic power, etc.

1/The exceptions to this rule included agriculture, fishing, mining, petroleum, leather and leather goods, and large-scale retailing, which are still subject to case-by-case screening for approval.

2/The government specifically excluded such sectors as aircraft, weapons, nuclear energy, computers, petrochemicals, etc.

Antimonopoly Law enforcement is strengthened

Enforcement of the Antimonopoly Law remained weak and passive until the 1970s, due at least in part to the politically weak stature of Japan's Fair Trade Commission. The decade of the 1970s, however, has seen some changes both in the Commission's exercise of its authority and the antimonopoly legislation it enforces.

By the mid-1970s, in the wake of the 1973-74 oil crisis and ensuing inflation, the Commission stepped up enforcement, building a momentum that ultimately resulted in the 1977 amendment to the Antimonopoly Law (which included a cartel profits surcharge provision). There has also been a marked increase in business' awareness of antitrust in recent years, as well as a growing anti-big business, anti-cartel sentiment on the part of the public. The Commission is steadily becoming more active in policing Japanese antitrust laws, particularly price-fixing. Additionally, to establish domestic cartels under the Antimonopoly Law, MITI is presently seeking the advice and counsel of the Fair Trade Commission to forestall potential antitrust action and to gain business acceptance of cartel decisions. In the context of potentially negative effects on the domestic economy, then, the Commission has demonstrated increasing power and influence over the formation of cartels.

Focus of tax measures changes

Basic and supplemental accelerated depreciation allowances for strong export performance discussed earlier were dropped in 1972 and 1971, respectively, in the face of large trade surpluses. The use of the rationalization allowance provided under the Enterprise Rationalization Law of 1952 was suspended in 1976. The overseas market development deferral was eliminated for large enterprises in 1972, but it continues in effect for small and medium enterprises.

In addition to tax measures which reinforced an economic climate favorable to industrial growth, the government continues to employ special tax measures to achieve particular policy goals. Today, these measures, primarily special depreciation measures, focus largely on environmental concerns, housing, energy, and depressed areas and encourage the growth and development of high-technology industries and diffusion of technologies. For example, in addition to regular depreciation schedules, an increased initial depreciation allowance is permitted

--for the purchase of energy saving equipment;

--for designated plant and equipment, such as that for the prevention of environmental pollution or that combining electronics and machinery;

--on equipment and plant in underdeveloped areas including coal mining regions, severely depressed industrial areas, and industrial development areas; and

--for machinery and equipment acquired by small- and medium-sized enterprises.

In addition to this increased initial depreciation, accelerated depreciation schedules are also employed to achieve industrial policy goals. For example, today accelerated depreciation is granted for rental housing, new buildings in urban redevelopment areas, machinery which fulfills rationalization plans for the textile industry or promotes rationalization of small- and medium-sized enterprises, and so on. (See chs. 4 and 5.)

MITI's loss of power

In sum, then, the combination of the above factors has led to several changes--not only in the tools of industrial policy but in MITI's power, as well. With increasing competition from newly industrializing countries and economic hardships resulting from the oil crisis, MITI increasingly finds itself restraining competitive Japanese industries from foreign markets and assisting others to adjust to declining competitiveness. As trade and investment laws were amended and international trade negotiations continued to call for reductions in tariffs and quotas and standardization of non-tariff barriers, MITI lost a major source of its power over industry; i.e., the foreign exchange allocation implemented through MITI's quota system. Moreover, some of the "carrot and stick" influence MITI previously had over key industrial sectors began to wane as firms within these sectors began gaining internal financial strength and had increased access to domestic and international financial markets. Additionally, economic costs to the consumer of postwar economic development were recognized and as a result, the Antimonopoly Law was strengthened as was the Fair Trade Commission's enforcement ability. Worldwide recession and competition from the newly industrializing countries led to a rising class of structurally depressed industries, many of which were import-dependent or energy-intensive. Budgetary deficits, high consumer prices, inflation, scarce resources, and unemployment led to increasingly difficult decisionmaking and increasing difficulty in achieving consensus. As a result, industrial policy decisions have become more and more politicized. Ministry of Finance and Bank of Japan desires to control inflation during this period won out over MITI policies for industrial development; hence stable growth began to take precedence over rapid growth. As MITI lost many of its tools of industrial policy to legislative or structural changes, administrative guidance grew in relative significance. 1/

1/Refers to the process whereby government officials "guide" industries and firms in desired directions by informal means and without statutory authority. This is a fundamental part of the government-business relationship in Japan and occurs in various government-business forums.

Today, MITI continues to influence government and industry views concerning the direction of industrial development. The importance of the foregoing discussion is in emphasizing the increasing economic, political, and social constraints within which MITI must operate. As a result of these constraints and legislative and structural changes, MITI has redefined the goals of industrial policy: first, the need for Japan to move up the technological ladder to increase productivity, promote conservation of resources, and other social development goals; and, second, the need to ease the adjustment problems of certain declining industry sectors, particularly unemployment.

The focus of MITI's efforts has changed rather dramatically over the last 30 years. MITI tools have changed from those of control to persuasion through administrative guidance. In addition to the government's concentration on industrial development, increased importance is now being attached to social welfare, including environmental concerns.

EFFECTS OF INDUSTRIAL POLICY CHANGES ON SECTOR-SPECIFIC PROGRAMS

MITI must accomplish the increasingly conflicting goals of industrial policy with fewer resources and fewer tools at its disposal. Chapters 4 and 5 will deal in detail with MITI tools and implementation of industrial policy toward growth and decline sectors under these new circumstances. These chapters illustrate that because of budgetary deficits, constraints have been placed on fiscal spending and MITI faces increasing difficulty in having its industrial spending programs approved. Moreover, with fewer legal bases for tools of industrial policy, MITI must largely rely on administrative guidance and the few "carrots and sticks" it has left to convince industry to follow its suggestions. Finally, programs themselves have gone from industry-specific to general programs potentially benefiting numerous sectors. MITI's view is that industries are interdependent and therefore government policies must be based on and recognize the interrelationships between industries. As a result, MITI programs to promote growth tend to focus on basic research and development with cross-industry applications.

In addition to responsibilities for promoting growth sectors, MITI began in the 1970s to find itself directing retreat primarily in two ways. First, MITI finds itself attempting to convince strong, internationally competitive sectors to restrain their penetration of foreign markets or to invest in those markets. Secondly, in the 1970s, MITI saw the rapid increase of structurally depressed industries. Some of these industries declined as a result of the worldwide recession following the oil crisis (e.g., shipbuilding) while others faced far longer term problems from competition from the newly industralizing countries (e.g., textiles) or loss of competitive advantage because of the dramatic increases in the cost of oil (e.g, aluminum, an energy-intensive industry). Because of the Structurally Depressed

Industries Law which provides guidance on the adjustment mechanisms, MITI, in conjunction with other cognizant agencies, has significant influence over the adjustment process. However, this adjustment process has sparked conflict within industries, conflict with MITI, and, often, conflicts between industry and its customers. A strengthened Fair Trade Commission has caused further difficulty for MITI in resolving these problems. Furthermore, MITI finds this adjustment process during periods of stable but slow growth far more complicated than that which had occurred during high growth periods. The basic concern during high growth is for the industry's firms; during the present slow growth period, the concern is far more politically sensitive--unemployment.

CHAPTER 4

INDUSTRIAL POLICIES FOR GROWTH INDUSTRIES

As Japan's economy has been rebuilt, its international comparative advantage has shifted and so too have the industries targeted for government assistance. We examined government policies for three growth industries--computers, robotics, and aircraft. Segments of each industry meet certain criteria enumerated in the government's overall economic goals, such as contributing to productivity or quality improvements in the Japanese economy or society as a whole.

Industrial policy for these growth industries is implemented within a framework of temporary laws which promote electronics and machinery industries. A loosely constructed administrative framework composed of numerous government and industry groups distinguishes industrial policy implementation.

The major industrial policy tools in use today are joint industry government programs for research and development of indigenous technology and tax and other measures for the diffusion of technology. Legal, administrative, and financial support for growth industries is not new in Japan; the types of support, however, constitute a departure from earlier periods of industrial policy.

DESIGNATED INDUSTRIES ASSISTED ON BASIS OF CONTRIBUTION TO ECONOMY WIDE GOALS

These three industries are in different stages of development, but all meet the criteria set out in Japan's industrial plans. Those documents stress the need for Japan to move up the industrial ladder by supporting the development of industries which are high technology, high value added and knowledge intensive rather than resource intensive, and to incorporate such advances in all industries.

For example, the computer industry, which dates to the late 1950s, provides the foundation for the technology based industrial structure Japan wants to achieve. It also increases productivity, adds value and technological content, and helps to conserve resources in all other industries. Many product lines of Japanese computer companies are now internationally competitive.

The robotics industry holds much the same potential role in Japan's industrial economy. Although it is a much newer industry, the diffusion of robotics and robotic technology throughout the agricultural, manufacturing, and service sectors can help to improve productivity and value added for the economy as a whole. There is no clear-cut technological leader among robotics manufacturers, but the Japanese companies are expected to play a large role as the international market develops.

Civil aircraft represents a high value added industry which combines many of the advances made in materials and process technology. Furthermore, the aircraft industry is expected to provide technology spinoffs for other industries, e.g. new lightweight composite materials. Civil aircraft production has gradually evolved since the mid-1950s, and the Japanese industry today is responsible for larger and more sophisticated segments of worldwide production.

LEGAL AND ADMINISTRATIVE FRAMEWORK OF INDUSTRIAL POLICY

Industrial policy for growth industries in Japan is conducted within a system of laws and administrative guidelines. Support for the electronics and machinery industries has been contained in a series of temporary laws which outline the role and responsibility of the government, the method of funding projects, overall industry and technology goals, etc. Companies, either independently or through industry associations, participate in project-specific goal setting and implementation. When the need arises, special purpose organizations are set up to act as information or funding conduits, or, to coordinate the conduct of basic research and development (R&D). The incorporation of so many groups in the industrial policy process does not ensure agreement between all parties, and in fact can lengthen the debate, but it does provide a number of forums for airing and resolving problems encountered in developing and implementing policies.

Promoting growth industries through temporary measures laws

The two most recent temporary measures laws, the Law on Extraordinary Measures for the Promotion of Specific Electronic and Machinery Industries or "Kidenho" and the Law on Extraordinary Measures for the Promotion of Specific Machinery and Information Industries, or "Kijoho", differ mainly in their coverage of industries. The Kidenho, which was in effect from 1971 to 1978, combined promotional measures for the machinery and electronics industries. In 1978, the Kijoho, which is in effect until 1985, added the software industry.

For the electronics industry, the Kidenho focused on supporting prototype R&D, commercial production, and manufacturing improvements with government assistance. Several successful programs were carried out during this period. For example, Japanese computer manufacturers developed prototype technologies in integrated circuits and commercially produced a third generation computer. The Kidenho empowered MITI to identify these and other products which were to receive government assistance through "enhancement programs" after consultations with the Electronic and Machinery Industry Council. It also allowed MITI to direct certain joint activities which were exempted from the Antimonopoly Law. The law permitted corporate mergers when needed to meet the goals of enhancement programs. This provision was modified in the Kijoho to support joint activities instead of mergers.

The Kijoho had essentially the same goals as the Kidenho, with increased emphasis on developing unexploited and leading edge technologies. The law made provision for specifying technologies to be developed. In the 1978 Cabinet Order listing such technologies, the computer, aircraft, and robotics industries were all represented. Although developing new technologies is increasingly emphasized, earlier goals of improving production technology and manufacturing productivity in the electronics and machinery industries remain important.

The importance of the information processing industry was recognized in 1970 with the passage of the Information Technology Promotion Agency Law, establishing that Agency as the major channel for government funding of computer software and services. Unlike the two preceding laws, this legislation established a separate government organization to support the software and information processing industries. Although its investment in the Agency ended in 1972, the government continues to provide subsidies for Agency expenses. Support for the production and maintenance of applied software systems is given through direct lending, credit guarantees, and consignment programs. The Agency works primarily with the 1400 small- and medium-sized data processing firms.

Industrial policies are administered by MITI with assistance from other government and non-governmental groups

The Ministry of International Trade and Industry, by law, has major responsibility for designing and implementing industrial policy for growth industries; the Ministry of Finance coordinates financial support for industry with overall budgetary concerns. Permanent industry associations exist for each major industry and a number of other associations of manufacturers, users, consumers, labor and academic groups, participate in developing and communicating industrial policy concerns.

The MITI Minister is given responsibility for designating products and establishing programs needed to meet industrial policy goals. Under the Kidenho for example, the Minister had the authority to direct manufacturers to engage in joint activities related to industrial standards, technology improvements, production, and procurement.

The responsibility for computers, robotics, and aircraft falls to MITI's Machinery and Information Industries Bureau. Divisions within that Bureau have responsibility for individual industries; e.g. Electronics Policy Division, Data Processing Promotion Division, Aircraft and Ordnance Division, etc. Typically, advisory councils representing industry and other nongovernmental interests maintain close relationships with MITI divisions. MITI has at times been required to consult with these groups in developing and implementing policies. The Electronic and Machinery Industry Council and the Aircraft Industry Council are two such groups.

MITI's Agency of Industrial Science and Technology, with much of the responsibility for developing and implementing the government's research and development policy, cuts across the industry specific MITI divisions. The Science and Technology Agency, attached to the Prime Minister's office, shares major responsibility for government-supported R&D projects and funds and administers a diverse range of activities.

The Ministry of Finance plays a crucial part of any industrial policy discussion. Although the Ministry does not propose projects or funding levels, it can reject a project proposed by MITI or modify funding requests. Indeed, at times, the budgetary concerns of the Ministry of Finance have delayed or reduced funding of industry initiatives. For example, an independent software technology center was forgone in favor of added responsibilities for the Information Technology Promotion Agency. A large scale R&D effort in robotics technology planned for this year has been postponed; and MITI and the Ministry of Finance have disagreed about the proper government role in the aircraft industry for much of the industry's existence.

In addition to the governmental groups represented in the policymaking and implementing process, a large number of industry associations have been set up to institutionalize the process. Some funding in the form of revenues from certain kinds of entertainment, such as bicycle and auto racing, is designated for the associations. The Society of Japanese Aerospace Companies, Inc., represents the aircraft industry in government councils, the Japan Electronic Industry Development Association and the Japan Software Industry Association represent the information industry, and the Japan Industrial Robot Association represents the interests of robot manufacturers and users.

As in any industry association, a unified position requires a good deal of compromise. For instance, the Society of Japanese Aerospace Companies represents major engine as well as small parts producers, and manufacturers as well as airlines, groups which often have competing interests. One of its major functions is to be an information conduit from the industry, for the industry, and between companies within the industry.

The focus of these associations changes over time. The Japan Electronic Industry Development Association, when established in 1958, represented the concerns of the electronics companies. As production of computer systems by those companies and others has grown, so has the Association's focus on computers within the electronics industry.

The existence of an industry association does not always guarantee that that industry's viewpoint will be accepted by the government. The Japan Industrial Robot Association was established at MITI's urging. Despite opposition from the Association, however, MITI successfully pushed the creation of a robot leasing company.

In the computer and aircraft industries particularly, a number of other organizations act as spokesmen for both manufacturers and users, and as information conduits to and from the government and society at large. For example, the Japan Information Processing Development Center, established in 1967, has played an integral role in identifying user requirements for the fifth generation computer study currently underway.

CURRENT INSTRUMENTS OF GOVERNMENT ASSISTANCE DIFFER IN STRENGTH AND EMPHASIS FROM FORERUNNERS

The major tools used by the government to implement industrial policy for growth industries are the organization of joint R&D programs, direct financial assistance, and preferential tax treatment for the development and diffusion of technology. Increasingly, those R&D projects most qualified for government assistance are very high risk and require large amounts of capital as Japan attempts not just to catch up but to push ahead in technological innovations. The organization of R&D programs, regardless of the industry or technology involved, follow a similar pattern. Special tax programs which formerly were used to strengthen the financial position of companies and to promote exports across the board are today used mainly to develop and diffuse technologies. Market protection through tariffs and quotas as used for infant industries in the 1950s and 1960s is gone, although domestic market stimulation for some of today's growth industries does exist. In industries such as civil aircraft, however, economies of scale cannot be reached in the domestic market and greater international collaboration is taking place. The government no longer gets involved in production arrangements.

Developing indigenous technology increasingly important

Current industrial policy priorities stress development of indigenous technologies. Most of the projects designed to do this for the computer, robotics, and aircraft industries stem from objectives identified in the Kijoho. In the computer and aircraft industries, R&D programs are the major focus of government support. They are becoming more important in robotics.

Government R&D projects in the computer industry fall into two basic categories--those directed toward developing basic, leading edge technologies and those concentrating on production and manufacturing improvements. The latter category deals mainly with applied software and the information processing industries, and projects are under the auspices of the Information Technology Promotion Agency.

Development of new technologies is the goal for the majority of projects currently underway and are the most important

when measured by direct yen subsidies from MITI. These projects stress technologies rather than products and are mostly longterm projects and, therefore, are not expected to have direct commercial applications for a number of years. Six major projects are currently underway: (1) development of basic technologies for the next generation of computers, including operating software, peripherals, and terminals, (2) research into functions likely to be required of the 5th generation computer, which includes many aspects of artificial intelligence, (3) development of high speed scientific computers, (4) research and development of new semiconductor elements with greater performance capabilities, (5) development of advanced information processing systems technology, and (6) development of an optical measurement and control system. The U.S. Embassy in Tokyo has determined that total government subsidies of 11.2 billion yen for private companies is planned for Japan's fiscal year 1982 for advanced computer, software, and integrated circuit R&D. Table 12 shows government funding levels for these programs in 1981 and 1982.

Of further importance for computer-related R&D is the role played by Nippon Telephone and Telegraph (NTT). According to the U.S. Embassy in Tokyo, NTT activities are important because:

--NTT is a public corporation with an annual R&D budget of $350 million.

--Private companies under contract to build telecommunications systems or components (for the most part the NTT "family" of Nippon Electric Company, Fujitsu, Hitachi, and Oki Electric) are also licensed to use NTT-developed technologies.

--NTT engineers have participated with private company researchers in the first stage of the 4th generation, or very large scale integrated circuit (VLSI) project, and the 5th generation projects.

--Internal NTT projects closely parallel MITI's high speed computer and optoelectronics projects.

Government assistance for R&D programs in the civil aircraft industry also includes projects for new product development and for the development of new, basic technologies. Government loans are providing part or all of the funding for R&D work on a new aircraft, a short take off and landing (STOL) plane, a new engine, new materials, and aircraft-related electronics systems. The next generation YXX airplane and XJB engine projects are expected eventually to result in products. However, the government's involvement covers the earlier stage of research and development. Technological requirements and specifications for the projects are still

Table 12
Computer and Related Electronic R&D Projects

HIGH SPEED COMPUTER FOR SCIENTIFIC & TECHNICAL USES 1981-89	Total:	23,000 million yen
	1981	31
	1982	813

To develop high speed logic and memory elements and parallel processing systems. Association formed to coordinate projects, but research carried out in individual companies and one MITI laboratory; patents are government property and expenses 100 percent government funded and non-repayable.

OPTICAL MEASUREMENT AND CONTROL 1979-86	Total:	18,000 million yen
	1981	2,418
	1982	3,238

To develop a system for remote control and monitoring of large scale industrial processes using optical elements for sensing and transmission. Joint company government research laboratories; patents are government property and expenses 100 percent government funded and non-repayable.

NEXT GENERATION INDUSTRIES BASIC TECHNOLOGIES R&D 1981-90	Total:	104,000 million yen
	1981	2,714
	1982	4,786

To conduct research in "revolutionary technologies," including new semiconductor elements, to be applied in industrial processes in the 1990s. Ten national laboratories and 48 companies are participating in some part of the project; expenses 100 percent government funded; patents are government property and MITI has announced they will be disclosed to foreign firms.

SOFTWARE PRODUCTION TECHNOLOGY DEVELOPMENT PROGRAM 1976-81	Total:	6,626 million yen

To decrease cost of software production through automation. Goals and budget revised downward to develop library of working aids for programmers. Original Automatic program generation goals now contained in "5th generation project."

NEXT GENERATION COMPUTERS (PHASE II) 1979-83	Total:	22,500 million yen
	1981	6,200
	1982	5,616

To develop operating systems software and peripheral equipment comparable to IBMs Future Series computers. (First phase of this project was VLSI development). MITI's original 50 percent share of expenses cut to 45 percent in 1982.

FIFTH GENERATION COMPUTERS 1979-91	1981:	15 million yen
	1982	426

To design information processing systems to deal with the basic social problems Japan sees for itself in the 1990s. An endowed research association was established in April 1982 and foreign enterprises are invited to join.

NOTE: All dates are Japan fiscal year. All funding is government-supplied.
Source: U.S. Embassy, Tokyo

evolving. Table 13 shows major projects with importance for the aircraft industry and the levels of government funding.

Table 13

Aircraft-related R&D Projects
Supported with Government Funding

Title	Association/Agency	Duration	Government Funding Total	1980	1981	1982
				(Y million)		
YX (airframe)	Civil Transport Development Corporation (CTDC)	1978-82	16,000	6,943	2,043	398
YXX Research (airframe)	CTDC/to be determined	1981-97	25,000	--	353	1,490
XJR Engine (RJ-500)	Association for Aerojet Engine Research	1980-87	40,000	1,787	4,722	5,322
Experimental Engine (FJR 710)	Agency of Industrial Science and Technology	1971-81	20,400	2,063	1,901	--
STOL (airframe)	Science and Technology Agency	1978-84	25,000	2,009	4,385	--
Basic Technology for Next Generation Industries:	Agency of Industrial Science and Technology	1981-90	104,000	--	--	--
new materials			--	--	1,356	--

Source: GAO, based on U.S. and Japanese government documents.

The robotics industry will be affected by several, more general, R&D efforts. For example, advances in software technology, such as developing optical recognition and processing systems, which were begun as computer projects, have important implications for robotics. In addition, one important R&D project underway since 1977 has the goal of integrating computer controlled machinery, such as robots, with other mechanical components and lasers to develop whole plants for flexible, automated manufacturing. A total expenditure of 13 billion yen is projected for this project during 1977-83 and a number of Japanese companies are participating with government laboratories. A major program specifically to develop basic robotics technology has also been proposed, but has been postponed because of budgetary constraints.

Focus on more basic, transferable products and processes

The projects outlined above reflect an addition to the type of R&D projects previously underwritten by the government. They are, for the most part, more basic, high risk and long term than such projects as the VLSI program completed in 1979 or the YS-11 twin engine turboprop project begun in 1959, which were aimed directly toward the output of a specific competitive

product. In the computer industry, many of the companies themselves now have access to more funds for their own R&D programs without government involvement. Robotics manufacturers typically are the robotics users and, until recently, have designed systems for their own use. In the aircraft industry, the government has been guided by its early experience and lack of success in investing in the development and production of a commercial airplane, the YS-11, in the 1960s.

The technologies developed from current projects are expected to have applications for their own industry as well as spinoff effects on the economy as a whole; software, new materials, and new function elements, for example, can contribute to any number of industries, "new" and "old."

As domestic development of new technologies becomes crucial for competitiveness and Japanese companies reach strong financial positions, the companies are undertaking more research and development on their own. The U.S. Embassy in Tokyo has determined that total government subsidies to private companies for advanced computer-related R&D represents less than 10 percent of total Japanese advanced R&D expenditures in computer related fields in Japanese fiscal years 1979 and 1980. There continues to be widespread and significant company representation in government supported R&D projects, however.

Government assistance is directed to an earlier phase of the manufacturing process than has been the case. The government does not participate in the production of commercial aircraft or engines; testing capabilities and marketing are also left up to the companies. 1/ Government efforts to direct the production of the computer industry and to divide manufacturing responsibilities have been unsuccessful and have apparently been dropped in favor of joint R&D programs. The exception to this in the computer industry, however, is procurement by the public corporation, Nippon Telephone and Telegraph. NTT does not have its own hardware production facilities and, to the extent that supplies are preferentially procured from Japanese computer companies or a group of certain Japanese manufacturers, that procurement assists in guaranteeing market demand. 2/

1/See GAO's Report to the Congress, U.S. Military Coproduction Programs Assist Japan in Developing Its Civil Aircraft Industry (ID-82-23) Mar. 18, 1982, for a discussion of military aircraft programs.

2/NTT procurement policies have been the subject of ongoing Japanese Government discussions.

It is in the emerging robotics industry that some of the same programs are being initiated that were evident in earlier stages of the computer and aircraft industries, e.g. leasing and marketing assistance.

Government influence on R&D programs

In general, the more basic and high risk the technology under development, the greater the government assistance, and responsibility of government laboratories.

Government funding is usually predicated on the formation of an association of participating companies. For example, the Civil Transport Development Corporation was set up to represent three Japanese manufacturers in the Boeing 767 joint venture with Boeing and Aeritalia. The Japanese Corporation is responsible for 15 percent of the project, and the three participating Japanese companies have divided workshares. The Corporation acts as the conduit for government money and as the agency responsible for coordinating the project. Although a small group within the Corporation is currently studying the next generation aircraft project (the YXX), a new association may be set up as the coordinating body once the project gets underway. Similarly, the Japanese Aeroengine Corporation represents three Japanese manufacturers in the joint engine development project with Rolls Royce.

In the computer industry, the same organizational and administrative pattern is followed for R&D projects. The VLSI Technology Research Association was set up as the umbrella organization for the five companies and government laboratories involved in the project. The Association will remain in place even though the R&D program is completed, for commercial production and the repayment of government funds. The Joint Systems Development Corporation was set up to develop software production technology; the Computer Basic Technology Research Association has been set up for the next generation computer technology development program.

Organizations which have been or will be set up for the newly announced 1981 R&D program for basic technologies for next generation industries are shown in Table 14. This 10-year project, which has application across industrial sectors has a total budget of 104 billion yen.

The government exercises a great deal of discretion over which companies participate in R&D projects. It owns the resulting patents for 100 percent, government funded projects. In some cases the government shares control with the participating companies, and in others it has access to resulting technologies. Licensing costs and requirements also vary. R&D responsibilities are allocated according to a company's technological and financial capability or lack thereof.

Table 14

Organizations Involved in R&D Programs for Next Generation Industries

	Object Technology	Enterprises to Be Commissioned	Core Organizations
New Materials	High-efficiency separation film	Toray, Teijin, Asahi Chemicals, Kuraray, Toyobo	Macromolecule Basic Technology Research Union
	Conductivity macromolecule	Sumitomo Denko, Daiseru Chemicals, Asahi Glass, Mitsubishi Chemicals	
	High-crystalline macromolecule	Toray, Teijin, Asahi Chemicals, Sumitomo Denko, Sumitomo Chemicals	
	Fine ceramics	Toshiba, Kyoto Ceramics, Ishikawajima-Harima Heavy Industries, Kobe Steel, Showa Denko, Sumitomo Denko, Asahi Glass, Electro-Chemistry, Japan Glass, Japan Special Ceramics, Kurosaki Ceramics, Toyota Machine Tools, Shinagawa White Brick, Inoue Japax Research Institute, Toyota Motors	Fine Ceramics Technology Research Union
	High-efficiency crystal control alloy	(1) High-efficiency crystal control alloy: Hitachi Works, Kobe Steel, Daido Special Steel, Mitsubishi Metals, Hitachi Metals, Sumitomo Denko, Ishikawajima-Harima Heavy Industries (2) Processing technology development: Mitsubishi Heavy Industries, Fuji Heavy Industry, Toyota Motors, Toshiba Machines, Ishikawajima-Harima Heavy Industries, Mitsubishi Electric Machines, Kawasaki Heavy Industries	Next-Generation Metals Composite Materials Research and Development Association
	Composite materials	(3) High molecular composite materials: Toray, Teijin, Mitsubishi Chemicals, Japan Carbon	
Biotechnology	Technology for large-scale cultivation and utilization of cells	Asahi Chemicals, Aji-no-moto, Kyowa Fermentation, Takeda Pharmaceutics, Toyo Brewery	Bio-technology Development Research Union
	Bio-reactor	Kao Soap, Daiseru Chemicals, Electro-Chemistry, Mitsui Petro-Chemicals, Mitsubishi Gas Chemistry, Mitsubishi Chemicals	
	Gene recombination and utilization technology	Sumitomo Chemicals, Mitsui Toatsu, Mitsubishi Chemicals Biological Science Research Institute	
New Function Elements	Super-grid components	Fujitsu, Hitachi Works, Sumitomo Denko	New Function Elements Research and Development Association
	Three-dimensional components	Japan Electric, Oki Electric, Toshiba, Mitsubishi Electric Machines, Sanyo Electric Machines, Sharp, Matsushita Electric Machines	
	Elements with increased resistance to environment	Toshiba, Hitachi Works, Mitsubishi Electric Machines	

Source: Denki Shimbun, Sept. 10, 1981

In both the VLSI program and the XJB aircraft engine joint venture with Rolls Royce, Japanese companies which were not original participants were included to keep them abreast of technological developments. The R&D organizations as constituted in Japan serve two purposes. They act as central accounting points for the lending and repayment of government loans and as control mechanisms to divide R&D tasks and technological advances within an industry.

Forms of financial assistance

The Japanese Government provides a variety of financial assistance measures to Japanese firms. The most common channel, as discussed above, is direct subsidies for R&D through corporations or associations with a number of private company members. The subsidies come directly from the general account budget, as for the YXX transport and 5th generation computer projects. For large projects, funds are usually matched in some proportion by the industry. These funds have been given on a success conditional basis; that is, as subsidies which must be repaid only if and when commercial production which follows an R&D project is profitable. The VLSI Association and the Civil Transport Development Corporation are both in the process of negotiating such repayment schedules. We do not know whether any success conditional loans have yet been repaid. MITI is apparently tightening some conditions; minimum repayments are required on some success conditional loans and funding is more difficult to obtain.

Loans have also come from the long-term credit banks, particularly for the software industry. The government agrees to purchase a certain amount of credit bank issues, the proceeds of which are then loaned to software companies through the Information Technology Promotion Agency.

The Japan Development Bank is the most important industrial policy funding institution. Interest rates are at prime and below, and terms are commercial and longer. Variations in rates and terms differ from project to project. For example, JDB loans to the computer leasing company had terms of one to 25 years as compared to the normal 7 to 10 years, and interest rates ranging from 1.0 to 3.0 percent below prime. The JDB has provided 60 percent of the robot leasing company's operating funds at 0.3 percent below city bank rates. The importance of these loans however, and this is true of all JDB loans, is that no compensating balances are required, as they are by the city banks. 1/

1/City banks require that a certain percent of a loan remain on deposit in the bank. These deposits are known as compensating balances, and increase the cost of loans to borrowers.

New loans for the development of technology stood at 10.5 percent of JDB's loans in fiscal year 1977, 13.0 percent in fiscal year 1978, 11.4 percent in fiscal year 1979, and 9.9 percent in fiscal year 1980. 1/ Table 15 contains the categories and amounts of JDB lending for technology.

Table 15

Loans for Development of Technology

(in billions of yen)

	FY 1977	FY 1978	FY 1979	FY 1980	
New loans	¥71.2	¥129.0	¥108.5	¥96.4	$ million $457
Development of electronic computers 1/	38.2	55.3	47.1	55.4	262
Domestically manufactured computers	35.5	53.5	45.0	54.0	256
Computer manufacturing plants	0.4	0.2	0.4	0.6	3
Data processing systems	2.3	1.6	1.7	0.8	3
Use of high technology in certain electronic and machinery industries	8.3	7.8	10.2	14.5	69
Electronic industry	3.8	2.1	7.0	12.0	57
Machinery industry	4.5	5.7	3.2	2.5	12
Development of domestic technology	24.7	65.9	51.2	26.5	126
Development of new technology	20.4	57.4	40.9	22.6	107
Trial manufacture for commercial use	0.9	4.0	1.2	0.3	2
Development of heavy machinery	3.4	4.5	9.1	3.6	17

1/ Includes loans to Japan Electronic Computer Corporation.

Source: Japan Development Bank

Other public financial institutions, such as the Small Business Finance Corporation and the People's Finance Corporation, participate in industrial policy by lending to small companies for robot installation. One of the Information Technology Promotion Agency's major functions is to also guarantee software companies' borrowings from private banks.

Government funds also act as a catalyst for private sector lending. Once an industry begins receiving government funds, it becomes a relatively low risk investment and the private banks are more likely to look upon companies in that industry with favor.

1/ The largest growth in component ratios of new JDB loans has been in resources and energy, increasing from 17.0 percent in fiscal year 1977 to 36.3 percent in fiscal year 1980.

Other industrial policy tools focus on industry-wide and economy-wide effects

There are a number of other industrial policy tools in use in Japan today. For example, measures have been used to promote the diffusion of products which embody new technologies. Commercial measures, although relatively less important than in the past, are still in use. And tax measures, in addition to direct subsidies discussed earlier, promote technological development.

Diffusing technology

One of the primary concerns of the Japanese Government has been the diffusion of technology throughout the manufacturing sector and indeed today, throughout the economy as a whole. Table 16 summarizes government measures in place to encourage diffusion of robot technology.

Table 16

Government Measures to Encourage Robot Use

Measure	Purpose	Government Support
Japan Robot Leasing Company	To lease industrial robots more cheaply and often for shorter periods than private leasing company	Low interest JDB loans for operating expenses FY 1980 Y140 million 1981 Y1,250 million
Direct low interest loans (below prime)	For small and medium-size manufacturers to automate processes dangerous to humans and prevent environmental pollution	Funding from the Medium and Small Enterprise Corporation (FY 1981, Y800 million) and the People's Finance Corporation
Special depreciation	To encourage installation of robots by manufacturers	13% in 1980-81 and 10% in 1982 of initial purchase price in addition to ordinary depreciation

Source: MITI; Daiwa Securities America, Inc.

During the early development phase of the computer industry, a leasing organization, the Japan Electronic Computer Corporation (JECC), was set up with low interest loans from the Japan Development Bank and the participation of seven major Japanese computer manufacturers. The government's objectives for supporting such an

organization were to (1) make Japanese manufactured computers available to a wide spectrum of businesses, (2) allow the manufacturers to better compete with IBM, (3) guarantee a market, and (4) rapidly return the price of the computer to the manufacturer for further investment. These objectives today have lost their importance, because Japanese manufacturers are well established and private leasing companies now fulfill the role once held by the government-supported organizations. The government has used the leasing company concept, however, for the robotics industry. The Japan Robot Leasing Company (JAROL) was established in 1980 with government encouragement. The government was especially interested in enabling small- and medium-sized firms to gain access to robots.

Although the computer manufacturers originally requested the JECC be set up, MITI wanted to hold an equity share. Both the manufacturers and the Ministry of Finance objected to that arrangement, and it was replaced by a final low interest lending arrangement. JAROL also was established only after disagreements between MITI and the robot manufacturers were resolved.

Tax measures have also been used to accelerate the diffusion as well as the development of technology. A tax deferred reserve fund is allowed for up to 40 percent of revenue accruing from the sale of general purpose software if that revenue is used for software development. This tax measure serves several functions--it provides companies with a tax subsidy for revenue that is used for the development of general purpose software programs and promotes their diffusion. The special tax depreciation allowed for the installation of computerized robots is similar in that it promotes the purchase of technology, thereby increasing demand and encouraging manufacturers to produce robots for users other than themselves.

Commercial policy no longer as important for promoting growth industries

Government assistance through commercial policies has included measures designed to increase exports (e.g. access to financing and marketing assistance) and protection from imports (e.g. tariffs, quotas, and nontariff barriers). The use of commercial policy for these industries over the last decade has declined in incidence, if not in effectiveness. Commercial policy played an especially important role during the early years of the computer industry, when Japanese manufacturers faced strong competition from U.S. manufacturers. High tariffs, quantitative restrictions, and controls over foreign investment were all used to restrict entry. Because of multilateral and bilateral trade negotiations and the increasing competitiveness of Japanese manufacturers, protection through tariffs and quotas has declined. Certain non-tariff barriers, such as government procurement, are the subject of ongoing negotiations. Commercial policy has not played as large a role in the present day robotics and aircraft industries and deals mainly with export promotion rather than import protection.

Tax incentives for development of technologies

Tax incentives for technological development are available economy-wide. 1/ Tax credits of up to 10 percent of total corporate taxes are available for investment in new R&D facilities and equipment. Accelerated depreciations are allowed for facilities used to produce certain technologies approved by MITI. Deductions are permitted on income received from the export of technologies or technical services.

EFFECTS OF INDUSTRIAL POLICY ON GROWTH: SOME TENTATIVE CONCLUSIONS

Japan's industrial policy clearly supports a number of high technology industries. These industries are not only important in and of themselves but also for improving the performance and productivity of the economy as a whole. Because of the emphasis on technology, most of the government's efforts are in support of company efforts to develop and diffuse innovative products and processes.

Direct subsidies to joint industry government R&D projects are a widely used form of government support. The associations set up for each project also imply joint control and responsibility by all participants. Through its access to the technology arising out of such projects, the government retains a measure of influence. The positive effects of government assistance on private bank lending, although not quantifiable, exist nonetheless. However, as new technologies become increasingly important for competitiveness, and their access to capital improves, manufacturers conduct more of their own R&D. Most of the companies participating in MITI's highspeed scientific computer project, for example, have separate, similar projects underway. In areas where international collaboration is necessary, a new set of foreign companies and governments participating in projects further loosen Japan's government-industry ties.

Preferential tax treatment has also been used to encourage the diffusion of new technology. Government supported leasing companies have successfully encouraged adoption of more modern and productive technologies, (e.g., computers and robots) in both manufacturing and service industries.

There are signs that the government and industry in Japan have entered a new relationship, partly due to the relative strength and/or needs of individual companies. The major computer manufacturers are successful international competitors.

1/For a more detailed discussion of corporate tax treatment in Japan, see "Corporation Income Tax Treatment of Investment and Innovation Activities in Six Countries," prepared for the National Science Foundation, PRA Research Report 81-1; August 1981.

Although these companies received substantial government support through the 1970s, today they are less dependent on the government for protection and/or financial assistance and are carrying out many of the previously provided activities on their own. Aircraft producers in Japan and elsewhere need to participate in joint multicountry ventures because of the costs and risks in developing and marketing a new plane or engine. Japanese robotics producers are close to state-of-the-art technology; the major producers are also major users and therefore need little government encouragement to either develop or use robots in their production processes.

Part of the changed relationship is also due to changing government priorities, e.g., inflation, pollution, and energy and social issues. The competing claims on government resources from declining industries and non-industrial concerns means that there are fewer resources at MITI's command. Some traditional tools, such as foreign exchange controls and protection behind high tariff walls, are no longer available to the government. Given the strength of the Japanese companies, such tools would be neither justified nor useful.

All of this is not to say that the government in Japan ignores the needs of industry or to claim that assistance that is available is of little consequence. Government funds are still going into the industrial sector, and the system of cooperation between industry and the government remains in place. The nature and requirements of Japan's growth industries today are different than those of industries previously supported with public assistance. The government's ability to steer these industries without the instruments of direct control available during earlier periods is unclear.

CHAPTER 5

INDUSTRIAL POLICY IN THE DECLINING SECTORS

Another important goal of Japanese industrial policy is to ease the adjustment problems of declining industries, particularly unemployment. Although industrial decline is not a new phenomenon in Japan, the worldwide recession following the 1973-74 oil crisis and increasing competition from the newly industrializing countries led to a significant increase in the number of structurally depressed industries and the severity of the problems facing such industries. In an economy experiencing rapid growth, shifting resources into emerging industries to adjust to changes in consumer taste, loss of competitiveness, and industrial failures is relatively easy. This adjustment process, however, is more complicated when an economy begins to face slower growth. The absorption of unemployed workers by expanding industries, for example, is less automatic than during periods of rapid economic expansion. In the mid-1970s, facing the aftermath of the oil crisis, Japan, not unlike the United States, West Germany, Great Britain, and other industrialized countries, began to experience significant industrial problems, slower economic growth and increased exposure to international trade and competition. Japan's problem, similar to that of other industrialized countries, is not that industries are in decline, but rather that adjustment to decline is no longer as automatic as it was previously, creating severe economic and political pressures which must be addressed by the government.

The Japanese response to decline is a coordinated approach involving contractual obligations among industry, government, and labor concerning shifts of industrial resources and tying industrial adjustment to worker and community adjustment. Although unemployment assistance and assistance to depressed regions is provided by the government, also important to the adjustment process are the incentives given to growth sectors to relocate or to build new plants in these depressed regions.

Our review focused on two declining industries--shipbuilding and textiles. Segments of the Japanese textile industry illustrate a declining industry that has experienced a gradual but steady loss of comparative advantage since the 1950s. In contrast, the shipbuilding industry has not suffered a loss of comparative advantage but faced severe economic disruption resulting from a sudden drop in world demand for ships, particularly tankers, following the 1973-74 oil crisis. Today, this industry is beginning to face potential loss of its comparative advantage to increasing competition from the newly industrializing countries.

INDUSTRY BACKGROUND

Shipbuilding

The Japanese shipbuilding industry was targeted for reconstruction and development following its devastation in World

War II. The industry received assistance in the form of interest rate subsidies, preferential loans, special tax measures, export credits, etc. By the early 1970s, Japan was launching over 50 percent of the world's ships.

Japan's shipbuilding industry relies heavily on exports, so it is particularly vulnerable to changes in world demand for vessels, which in turn depends on the volume of world trade and world gross national product. Thus, worldwide economic trends have a dramatic effect on the Japanese industry. By 1974, this industry held a 61.8 percent share of the world market and was 83 percent dependent upon exports. The effects of economic disruptions during the latter half of the 1970s are evident, given that Japan's new launchings dropped from 17 million gross tons in 1975 to almost 4.7 million gross tons in 1979, a decrease of 72.4 percent.

Textiles

The Japanese textile industry has played a significant role in the development of the Japanese economy and is still one of the largest manufacturing employers in Japan. Within the industry, the pattern of decline has been gradual but steady, varying by type of raw material and by manufacturing process; e.g., between natural and man-made fibers and among the yarn, cloth and apparel segments of the industry. As Japanese wage rates rose in the 1960s, segments of the industry began to lose comparative advantage to competition from the newly industrializing countries. The government initiated several programs to assist the industry when it became apparent that such competition would continue to affect the health of the industry.

LEGAL BASIS OF GOVERNMENT AUTHORITY

The government's response to problems of adjustment to decline in the textile and shipbuilding industries is contained in numerous pieces of legislation. The Special Textile Act (1967) and the New Textile Act (1974) were promulgated to cope with long-term problems of the industry, while the Temporary Textile Act (1971) and the Exceptional Textile Act (1973) were designed to deal with short-term problems.

During the immediate post-oil-crisis period, no specific laws were passed to cope with the problems of the ailing shipbuilding industry. The Japanese Diet (Japan's national legislative body) and the government recognized the problems the industry was facing and in developing a plan to assist the industry to adjust recommended that the government should

--support measures for structural improvement to stabilize shipbuilding operations;

--develop measures to create demand for ships; and

--design measures to improve the employment situation.

The Structurally Depressed Industries Law

The severity of the economic disruptions in the 1970s and their effects on industry led to the passage of the Structurally Depressed Industries Law in 1978. Provisions of this law were designed to help industry make long-term adjustments to changing domestic and international conditions under government guidance. Initially, open hearth steel production, aluminum refining, synthetic fiber production, and shipbuilding were designated as depressed industries. This law set out general criteria under which industries can apply for designation as depressed and outlines the concept of a basic stabilization plan to reduce industry capacity by disposing of equipment and prohibiting new or improved equipment, and to provide measures for stabilizing employment. Basically, this law provides the government with a general framework, legal base, and guidelines for assisting the adjustment of declining industries.

There are three basic criteria which industry must meet to be designated structurally depressed under this law.

1. More than 50 percent of the industry's firms must be experiencing financial difficulties.

2. The industry must be characterized by unusually excessive plant capacity.

3. Firms representing two-thirds of the industry must sign a petition seeking designation as structurally depressed.

When an industry is so designated, the cognizant ministry is empowered to formulate a stabilization plan for the industry. The ministry must forecast supply and demand (including imports and exports) in order to measure excess productive capacity, establish the extent to which such capacity is to be shut down, and decide how the shutdown is to be handled,i.e.,scrapping or mothballing. During this analysis process, the ministry is required to consult with an industry advisory commission. Labor unions are granted specific right to contribute to these deliberations by the law. The law also gives Japan's Fair Trade Commission the right to reject or modify ministry plans if these plans are considered too anticompetitive. The Commission's approval of these plans exempts industries from provisions of the Antimonopoly Law.

In addition, in order to carry out plans calling for scrapping of plant or equipment, the law authorizes establishment of a depressed industries credit fund to ease problems caused by such scrapping. The fund was established with 8 billion yen from the Japan Development Bank and 2 billion yen from the private sector. Under provisions of the law, the cognizant ministry is authorized to place restrictions on new

plant and equipment investment in the designated industries and to use administrative guidance to encourage firms to shift into different product lines. The authority given the government over adjustment assistance to declining industries is a reflection of the increased difficulty of adjustment during slower growth periods.

Other government assistance programs

Comprehensive policies aimed at assisting industries' adjustment include measures to (1) rationalize and assist small- and medium-sized enterprises, (2) assist depressed regions, and (3) assist the unemployed. These measures have been used in both shipbuilding and textiles to ease the adjustment process.

The Law for Temporary Measures for the Unemployed in the Designated Depressed Industries and the Law for Temporary Measures for the Unemployed in Designated Depressed Districts, administered by the Ministry of Labor, provide the framework for government assistance to displaced workers. In general, unemployed workers receive unemployment insurance, retraining and job-hunting allowances. Unemployed workers from structurally depressed districts or industries are also entitled to extended unemployment benefits, higher retraining allowances, and priority treatment in job-hunting under the above two laws. MITI, or the appropriate cognizant ministry, has primary responsibility for determining which industries and which regions are to be designated as structurally depressed and eligible for government assistance. The Ministry of Labor works with the responsible ministries in these important decisions to ensure that employment adjustment is available to complement industrial and regional adjustment.

These two employment adjustment programs are not mutually exclusive; in fact, they sometimes overlap. For example, workers in a depressed industry could also be covered by measures provided to workers in depressed regions. Moreover, with the special measures provided to workers in small- and medium-sized companies, a worker in a small shipbuilding company in a depressed region would be entitled to benefits under all three programs. According to Ministry of Labor officials, the benefits provided under these three programs are the same basic measures provided to unemployed workers in general, they merely involve more extensive coverage.

POLICY MECHANISMS FOR SHORT-TERM DISRUPTIONS AND LONG-TERM PROBLEMS

In an effort both to fight immediate recession problems and to remedy long-range industrial ills, the Japanese Government has taken a two-pronged approach to dealing with the declining industries. Anti-recession cartels have been formed to deal with short-term price and production disruptions. Efforts

to scrap excess capacity equipment and modernize production processes are being pursued to deal with long-term problems of competitiveness.

Both short and long-term measures have been used to help the synthetic fiber segment of the textile industry adjust. In response to a dramatic drop in domestic demand following the oil shock of 1973-74, and later an equally dramatic drop in exports, the government and industry determined that some assistance measures for the industry were essential. The industry itself, however, was unable to agree on an adjustment scheme, and consequently MITI, in 1977, issued "guidance" to the industry to institute production cutbacks of 25 percent for certain man-made fibers. The cutbacks lasted for 6 months and the industry gained as prices of these fibers firmed up considerably. In April 1978, these cutbacks were then formalized through the formation of a Fair Trade Commission-approved anti-recession cartel which was finally terminated a year later.

The continuing effects of the recession and the steep appreciation of the yen in 1977, however, led to the continuing decline of the synthetic fiber segment of the textile industry, which was declared structurally depressed in 1978 with the passage of the Structurally Depressed Industries Law. The basic stabilization plan developed in accordance with the law was aimed at reducing production capacity by scrapping or mothballing equipment. Scrapping was to be completed by January 1979, and mothballing was to continue through March 1981. Scrapping was intended to allow the synthetic fiber segment of the industry to divest itself of unproductive equipment and thus enable it to focus its attention on other more competitive activities. A report by the U.S. Embassy, Tokyo, indicated that production cutbacks by the industry had proven effective and the Japanese industry was back on its feet again. It is important to note, however, that the high cost of raw materials for synthetic fiber production will pose a continuing threat to the Japanese industry both domestically and internationally.

The Japanese shipbuilding industry similarly benefited from provisions of the Structurally Depressed Industries Law. This industry, faced with a dramatic decline in world demand for ships following the 1973-74 oil crisis and projections that future demand would not approach pre-oil crisis levels, was also designated structurally depressed under the law. As required by the law, a stabilization plan was drawn up in consultation between the government and industry calling for roughly a 35 percent cutback in production capacity. Individual firm scrapping volumes were developed in consultations between the industry, its associations and the government and were determined on the basis of firm production capacity. This scrapping effort proved insufficient to restore balance in supply and demand; the Ministry of Transport thus recommended that operating levels be adjusted to achieve production

cutbacks. Participating companies formed an anti-recession cartel in 1979 to carry out the scrapping program; operating levels for fiscal year 1979 were set at an average of 39 percent of peak year operating levels, and subsequently raised to 51 percent in fiscal year 1981. The cartel was scheduled to terminate in March 1982; according to the Ministry of Transport, the Fair Trade Commission was not expected to approve an extension, presumably because it was no longer considered necessary in view of the industry's renewed competitiveness. The Japanese industry had succeeded in regaining its export position, reclaiming a 46.5-percent share of the world market, albeit at reduced absolute levels, by 1980.

Political constraints hamper industrial adjustment

The Japanese Government sometimes finds it politically difficult to declare that an industry, or segments of an industry, should be phased out. The spinning segment of the textile industry provides one example. Japanese Government officials acknowledged that it is politically difficult for MITI to recommend phasing out segments of the textile industry even though it may want to advocate this course of action. Instead, government efforts to restore a supply and demand balance have been aimed both at scrapping equipment and at modernizing equipment and facilities to increase efficiency. Thus, the government has instituted measures aimed at revitalizing the industry through modernizing equipment and facilities to increase efficiency while at the same time trying to lure these firms and workers into other activities. MITI officials further explained that this is all part of the bargaining process--to get firms and workers to shift out of the industry, the government has to offer the industry a comprehensive assistance plan that includes measures to encourage modernization as well as phaseout.

The government was faced with a similar political problem in the shipbuilding industry when it had essentially determined that Sasebo Heavy Industries should be allowed to go bankrupt and close its doors. Although perhaps an "economically" rational decision, the intervention of the Prime Minister forced the government to reassess its position and bail the firm out of its economic troubles.

Government officials noted that because of the effect a phaseout or bankruptcy may have on a particular region or regions, such economically rational decisions can be too politically and socially costly. It is interesting to note that since Sasebo is a major employer in the region, its bankruptcy would have caused severe social, political, and economic problems in the area; employees would find it difficult to move into other activities in that region. In the case of the spinning mills, however, although admittedly wholesale phaseout of the industry would have caused serious consequences in the Nagoya area, efforts to streamline the industry were more successful, primarily because other expanding industry was also located in the area.

Emphasis of government assistance is on helping small and medium firms

Japan's larger firms are expected to carry out production capacity cutbacks without government assistance. This practice is based on the understanding that major industrial companies are highly diversified and engage in a number of economic activities. The government perception is that major companies are financially capable of handling the adjustment process on their own and can shift resources into other industrial activities within their own companies. However, one government contribution is essentially to exempt these large companies from the Antimonopoly Law while they are carrying out joint scrapping activities.

The Japanese Government has adopted or supported a number of adjustment assistance measures and programs to assist small- and medium-sized firms, including

--preferential financing through government, commercial, and long-term credit banks;

--direct and indirect government purchase of scrapped equipment;

--access to the designated depressed industries credit fund; and

--formation of joint scrapping associations.

In essense, this assistance is based on helping these firms to (1) phase out without causing social disruption and/or (2) modernize so they can become more efficient. The Small and Medium Enterprise Agency, under the jurisdiction of MITI, was established in 1963. One of its functions is to provide loans at or below prime interest rates to small- and medium-sized firms through its affiliated financial institutions--the Small Business Finance Corporation, the People's Finance Corporation, and the Bank for Commerce and Industrial Cooperatives.

Large companies are sometimes expected to help repay the government loans extended to small- and medium-sized companies. In the shipbuilding industry, under the basic stabilization plan drawn up by the industry and government, the seven major companies have had to help the other shipbuilding companies involved in the capacity cutback scheme to make the loan repayment arrangement work. As agreed, all firms involved in the scheme are to pay 1.3 percent of the price of each new vessel contract order to a common fund established to repay loans from the banks. In effect, the seven major shipbuilding companies have assumed the role of guarantors of government loans to small- and medium-sized firms in the industry even though they are not the beneficiaries of these loans.

GOVERNMENT CANNOT FORCE INDUSTRY TO ACCEPT STABILIZATION PROGRAMS

Government has some leverage in monitoring scrapping and capacity cutbacks

Much has been written about the ability of the Japanese Government and industry to work together in developing appropriate industrial goals and policies. However, it is not always clear as to what extent government pressure must be exerted to ensure that companies comply with the objectives of rationalization plans. In the case of shipbuilding, the Ministry of Transport has some legal authority which it can use as leverage. Under the Shipbuilding Act of 1950, the Ministry is authorized to issue permits to shipbuilding companies for the expansion of production facilities and these companies are required to report to the Ministry the manufacture of all vessels above a certain tonnage. Although these measures were originally introduced to enable the Ministry of Transport to regulate new entries into the shipbuilding industry, they now appear to give the Ministry the power to enforce the rationalization plan.

The Japanese Government has also generally avoided the use of import restrictions when depressed industries face competition from abroad. Continued imports require that an industry face the problems of adjustment as quickly and efficiently as possible. In this sense, avoiding the use of import restrictions forces the industry to recognize that adjustment is necessary, thus providing the government some leverage in obtaining industry compliance with stabilization plans. By maintaining a position of "neutrality," the government is thus able to encourage adjustment on the part of the industry while not having to accept "blame" for the industry's problems.

The passage of the Structurally Depressed Industries Law also provided the government with some leverage in industrial adjustment. As noted earlier, the law requires that the industry voluntarily submit for designation as structurally depressed when it is characterized by excessive productive capacity and over half of its firms are experiencing financial difficulties. Designation as structurally depressed implicitly obligates the industry to work to achieve a restructuring or stabilization program. Acceptance of the stabilization plan obligates the government to provide guidance and/or assistance to the industry in the adjustment process. The authority of the government to monitor and regulate scrapping, mothballing, and new plant and equipment investment allows the government added leverage in enforcing stabilization plans.

The existence of leverage in developing a structural adjustment program is thus fairly apparent. What is not as apparent is the leverage of the government in determining the exact nature and content of these stabilization programs. Proposed

stabilization plans have been a source of conflict between the government and industry. There have been times when the government has settled for less than what it would consider optimal restructuring.

Development of basic stabilization plans: conflict or cooperation

Specific industry plans developed under the 1978 Structurally Depressed Industries Law are the result of extensive discussions and interactions between the industry concerned and the government. Consultative councils and the cognizant ministry set the groundwork for these interactions. Such councils typically consist of representatives from the troubled industries, government, and other related industrial sectors. The councils recommend necessary steps the industry should take to improve its position. On the basis of these recommendations, the cognizant government ministry develops a basic stabilization plan for the industry. These stabilization plans have provided for (1) permanent production capacity cutbacks, (2) demand creation, and/or (3) temporary adjustments in operating levels.

Despite a generally constructive working relationship, industry and government have sometimes failed to agree on certain issues. In the shipbuilding industry, for example, disagreements occurred regarding how the industry stabilization plan should be carried out. The major shipbuilding companies raised some objections to helping repay or guarantee loans which they were not entitled to receive. Furthermore, large and small shipbuilding companies disagreed as to who should bear the burden of capacity reductions. The smaller firms claimed the larger firms could afford to bear a greater share of the burden, while the larger firms felt that all should suffer equally. Even among the larger shipbuilders themselves, disagreements existed as to the appropriate mix of capacity reductions.

The aluminum refining industry, a highly energy intensive industry suffering from the dramatic increases in energy prices following the oil crisis, provides a further example of disagreements. Conflict between government and industry over proposals to aid the industry has caused significant delays in the development of a final program for restructuring this industry. Numerous proposals have been put forward since the industry's designation as structurally depressed in 1978, including capacity reductions, reorganization of the industry itself, subsidizing the cost of electric power for this industry, and so on. To date, however, no long-term stabilization plan has been accepted by all the parties concerned, although in December 1981 a temporary tariff-quota plan to exempt from tariffs aluminum imported by the industry was reportedly approved by MITI and the Ministry of Finance.

EMPLOYMENT ADJUSTMENTS: PRIVATE INDUSTRY TAKES THE LEAD

Depressed industries have demonstrated that private industry has the initiative, ability, and flexibility to make necessary large-scale employment adjustments. In some instances, depressed industries have been successful in shifting workers internally to other divisions within the firm; in other instances, workers have been placed externally with new firms. Both the textile and shipbuilding industries have taken the lead in helping their excess workers to adjust. Private firms have taken primary responsibility for retraining and shifting their workers into other industrial activities when necessary. Large firms, in particular, seem to be able to shift workers either into other activities within their companies or to help place them in other industries.

The experience of one of the major shipbuilding companies, Ishikawajima-Harima Heavy Industries (IHI) illustrates how one such company dealt with its excess workers. When the shipbuilding industry went into recession, about 4,600 workers left IHI voluntarily. In addition, a mandatory early retirement program was established for workers 55 to 59 years of age. Once these workers left, the company was able to draw up a plan to determine how many workers should be shifted into other production groups within the company. IHI retrained some workers to build jet engines while other workers were shifted into the company's nuclear power division. According to IHI officials, most workers seemed willing to accept the transfer, although these shifts, in some cases, have proven difficult.

Historically, growth industries were able to absorb excess workers from depressed industries. For example, during the worst part of the shipbuilding industry recession between 1977 and 1979, IHI sent 300 to 500 employees to work temporarily in an auto plant north of Tokyo. This arrangement was possible because the Japanese auto industry at that time was growing rapidly and the company welcomed the additional workers. According to company representatives, all of the workers "loaned" to the auto company have since returned to IHI, but not to its shipbuilding division.

Excess textile industry workers also were absorbed by growth industries. The case of the cotton spinning segment of the industry provides a typical example. The industry was hit particularly hard because it is more labor-intensive than the synthetic fiber industry. In the mid-1970s, spinning workers in Nagoya, the city most affected by the industry's decline, were able to find jobs at a nearby auto plant.

Variable labor force eases adjustment process

In Japan, the practice of contracting out to smaller firms part of production work and the existence of a large percentage of women employees who were not regular, permanent employees in

the workforce are two major characteristics of the shipbuilding and textile industries, respectively. These characteristics have made employment adjustment for firms in these industries a little easier. In the shipbuilding industry, subcontractors or piece-workers allowed the major firms in the industry greater flexibility in reducing employment than a labor force composed entirely of regular employees would have permitted. Part of the adjustment was thereby spread among a large number of small firms, which are eligible for government assistance. Although MITI has not attempted to trace what happened to displaced textile workers, some MITI officials are of the opinion that, since many of these workers were women, they probably went into one of the service industries or dropped out of the job market altogether. Women accounted for roughly 71 percent of the workforce in the textile industry and 71 percent of all textile workers displaced during fiscal years 1974-80.

LONG-TERM POTENTIAL OF DEPRESSED INDUSTRIES UNCERTAIN

The success of government measures to assist declining industries remains to be seen. Even if a rationalization plan has been an appropriate response to one specific situation, its effectiveness in addressing long-term competitive problems without further infusions of government assistance is open to debate. The Ministry of Transport has expressed optimism about the future of the Japanese shipbuilding industry, but industry representatives are more concerned over the increasing competition from Korea and Taiwan. Added to this threat is the fact that government efforts to rationalize the shipbuilding industry have not been fully tested against increasing competition from these newly emerging foreign shipbuilding industries.

The future is equally uncertain for the textile industry. Even though efforts have been made to rationalize textile mill products and synthetic fiber segments of the industry, these two segments continue to face rising raw material and energy prices leading to a potential loss of comparative advantage in export markets and competition from imports. Reportedly, the government has seen some success in its long-term strategy for the textile industry. Although there is some question about the long-term competitiveness of the high-quality, synthetic fiber fabrics and apparel segment of the industry, the government has supported resource shifts from such uncompetitive segments as textile mill products into these higher value added sectors. Even if the apparel industry proves to be competitive, the government will continue to be faced with the problem of how to best deal with the uncompetitive sectors of the textile industry.

CONCLUSIONS

The Japanese Government has developed a coordinated approach to problems of adjustment of declining industries. Within the framework of the Structurally Depressed Industries Law, industry and labor agree to stabilization and/or restructuring plans in

return for government assistance in the adjustment process. The significance of such programs lies in industry and labor recognizing the need to restructure and being willing to do so, as evidenced by acceptance of stabilization plans. By avoiding the use of import restrictions the government forces industries to recognize the need for adjustments. Moreover, careful analysis of the causes and effects of the problems faced by a particular industry allows the government to determine the most effective mechanism for adjustment; e.g., scrapping, mothballing, and/or modernization programs. Another important feature of the government's adjustment programs is that the government does not accept "blame" for the industry's problems or total responsibility for its adjustment. Rather, responsibility for industrial restructuring and employment adjustment is shared by industry and labor with the government providing the incentives and funds where necessary.

The adjustment process in Japan is not always smooth or easy. Political considerations can hamper or override what would otherwise be economically rational decisions on the part of the government. However, measures to assist depressed regions and incentives to encourage relocation of growth industries in these areas help to alleviate some of these problems.

The ultimate success of the Japanese Government's adjustment programs will lie in the government's ability to closely coordinate adjustment to decline with incentives to encourage shifts of resources into more competitive, promising activities. Tax incentives to encourage new industries to locate in depressed regions and programs of the Japan Development Bank to develop infrastructure and provide funding to attract industries to these areas are all steps in this direction. In a slower growth environment, recognizing that emerging industries can ease adjustment problems of declining industries and coordinating programs to assist resource shifts from declining to emerging industries are key elements of Japan's positive adjustment policy toward decline.

SELECTED BIBLIOGRAPHY

BA Asia Limited. The Japanese Semiconductor Industry. 1979.

Baranson, Jack. The Japanese Challenge to U.S. Industry. Lexington: Lexington Books, 1981.

Campbell, John Creighton. Contemporary Japanese Budget Politics. Berkeley: University of California Press, 1977.

Comptroller General of the United States. United States-Japan Trade: Issues and Problems. Washington, D.C.: U.S. General Accounting Office, September 21, 1979.

Hadley, Eleanor M. Antitrust in Japan. Princeton: Princeton University Press, 1970.

Johnson, Chalmers. Japan's Public Policy Companies. AEI-Hoover policy studies 24. Washington, D.C.: American Enterprise Institute for Public Policy Research, 1978.

Magaziner, Ira C., and Hout, Thomas M. Japanese Industrial Policy.

Nakamura, Takafusa. The Postwar Japanese Economy: Its Development and Structure. University of Tokyo Press, 1981.

National Science Foundation. Corporation Income Tax Treatment of Investment and Innovation Activities in Six Countries. PRA Research Report 81-1. Washington, D.C.: National Science Foundation, 1981.

Organization for Economic Cooperation and Development. Economic Survey: Japan. Paris: OECD, 1979 and 1980.

Organization for Economic Cooperation and Development. The Industrial Policy of Japan. Paris: OECD, 1972.

Organization for Economic Cooperation and Development. Monetary Policy in Japan. Paris: OECD, 1979.

Ozaki, Robert S. The Control of Imports and Foreign Capital in Japan. New York: Praeger Publishers, 1972.

Ozawa, Terutomo. Japan's Technological Challenge to the West, 1950-1974: Motivation and Accomplishment. The Massachusetts Institute of Technology, 1974.

Patrick, Hugh, and Rosovsky, Henry, eds. Asia's New Giant: How the Japanese Economy Works. Washington, D.C.: The Brookings Institution, 1976.

Reich, Robert. "Making Industrial Policy," Foreign Affairs. Spring 1982.

Suzuki, Yoshio. Money and Banking in Contemporary Japan. New Haven: Yale University Press, 1980.

U.S. Congress. House Committee on Ways and Means. High Technology and Japanese Industrial Policy: A Strategy for U.S. Policy Makers, by Julian Gresser. Washington, D.C.: Government Printing Office, 1980.

U.S. Congress. Joint Economic Committee. International Competition in Advanced Industrial Sectors: Trade and Development in the Semiconductor Industry, by Michael Borrus, James Millstern, and John Zysman. Joint Committee Print. Washington, D.C.: Government Printing Office, 1982.

U.S. Congress, Joint Economic Committee. The Japanese Financial System in Comparative Perspective, by Eisuke Sakakibara, Robert Feldman, and Yuzo Harada. Joint Committee Print. Washington, D.C.: Government Printing Office, 1982.

U.S. Department of Commerce. Japan: The Government-Business Relationship. Washington, D.C.: Government Printing Office, 1972.

U.S. Department of Commerce. 1982 U.S. Industrial Outlook. Washington, D.C.: Government Printing Office, 1982.

United States Tariff Commission. Postwar Developments in Japan's Foreign Trade. Washington, D.C., 1958.

Vogel, Ezra F. Japan As Number One: Lessons for America. Cambridge: Harvard University Press, 1979.

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